

# Editorial Comment

## Will the Manufacturers' Tax be dropped entirely?

The House Ways and Means Committee, on October 25, approved a surprise excise tax—a manufacturers' excise tax of 10 per cent on soap, tooth pastes, dentifrices and mouth washes. The proposed increase in tax on cosmetics from 10 to 25 per cent had been anticipated and was not considered by companies as over-burdensome, as the consensus is that all the cosmetics that can be manufactured can be sold, tax or no tax. Consequently no great ado has been made about this proposal.

It is the tax on the essential items, such as soap, that caused the greatest concern. Soap is considered an essential item, and as such should not be taxed at all. It is claimed that most of the soap is used by the hardest working class and by the lower classes. Therefore, the argument that a general sales tax should not be placed on necessities applies to the taxing of soap, as it is decidedly in the essential class. This argument apparently has borne fruit. Soap, just one week after it was placed on the list of products proposed to be taxed, has been removed.

Just what the fate of the tooth pastes, dentifrices and mouth washes will be is still undecided—as we go to press. There seems to be but slight chance, however, that when the tax committee comes to drafting the final bill these will be omitted. However, there is some chance that the tax may be written as a retail sales tax, which would meet with much greater favor from the manufacturers. Which ever way the wind blows the tax will undoubtedly be passed on to the consumer, who in the final reckoning is usually the goat.

## Effect of labor shortage areas on local cosmetic plants

Cosmetic companies will probably be effected indirectly by the proposed extension of urgency labor shortage areas. To date, the plan has only been operative in San Diego, Los Angeles, San Francisco, Portland, Seattle, Akron, Detroit and Hartford. Committees will be appointed to apportion the labor in these areas as they are named, which means that in the cosmetic industry a labor squeeze will result for plants located in "urgency" areas.

Already foresighted manufacturers have taken steps to move their plants to some less critical area which under existing conditions seems a very wise move.

# the American Perfumer and ESSENTIAL OIL REVIEW

C O S M E T I C S - S O A P S - F L A V O R S

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*Fellon Chemical Co., inc.*

# desiderata

*Comment on interesting new chemical developments and their application to cosmetics and toiletries.*

by MAISON G. DENAVARRE

## POST-WAR PLANNING

One of the large chemical manufacturers' executives recently published an article suggesting an outline for planning a schedule for post-war studies. Three main points are considered. Research is one of the first points with its many branches. A fact brought out is the ratio of company expenditures for research as compared to the rest of the industry.

Here is one place where the cosmetic industry is weak. Its total industry expenditure for research is a pittance. From it we expect nothing short of miracles. But only a handful of companies spend anywhere near the amount of money they should. None of them spend anything like those in other industries. Of course, the cosmetic industry is not alone in this, but it is no reason for being lax in research and the spending of money which makes it possible. The industry is doing a lot of duplication in research because a common level of exchange of ideas has not been developed. This lack of willingness to exchange ideas makes whatever research is being done cost much more than it would otherwise. The age of mysteries and secrets is gone. Let's wake up to it and get busy!

## DEODORIZING ISOPROPYL ALCOHOL

A letter has just come in saying in part that "we have tried an activated carbon in deodorizing some isopropyl alcohol, but with poor results." What else would you expect?

There are a variety of activated carbons. Some deodorize and some don't



M. G. DeNavarre at work in his laboratory

do it so well. Some require the presence of a lot of water. Some materials that are being deodorized require a lot of water to prevent them from reverting to the odorous stage after they have been cleaned up. There is no easy way to do it. Each product is a problem all its own. The fact remains, some people are doing it, and doing it successfully. Follow the procedure outlined in the October issue of the *AMERICAN PERFUMER*, page 31. Get the best activated carbon for the job, but don't be satisfied or disgusted with one treatment or one experiment. Try them all in your operation. *One is going to work.* Keep in mind, however, that *deodorizing* is a comparative term.

## GLYCERINE SUBSTITUTES

Frank Atkins has recently published the results of his tests with glycerine substitutes appearing in the British Pharmaceutical Codex, 4th Supplement, as well as others. Equal volumes were left in open dishes, at room temperature, for a week. The weights were checked daily. Only sodium lactate (70 per cent sol.) resembled glycerine at all. After one week, glucose lost 76 per cent, glycerine 69 per cent and

sodium lactate solution 65 per cent. Most glycerine substitutes on the British market are of the mucilage type. Propylene glycol, commercial sorbitol syrup or invert sugar were unfortunately not included in these tests. The glycol and sorbitol syrup would undoubtedly prove interesting, especially if properly compounded previously. Mixtures containing propylene glycol are better than the glycol alone as far as cosmetics are concerned, a fact not often appreciated.

## HAIR VITAMIN VALUELESS

After administering 20 milligrams of calcium pantothenate daily for six months to 27 patients Kerland & Herwick find that the so-called gray hair vitamin produces no significant change in the color of gray hair, according to their report in the *J. Am. Med. Ass'n*. Clinical reports such as this will go a long way toward keeping the cosmetic industry on a sound ethical footing. While this investigation was probably not instigated because of its cosmetic significance, nevertheless it establishes further a growing heap of real evidence for or against the contention that calcium pantothenate is an "anti-gray hair vitamin."

## PROPYLENE GLYCOL IN CIGARETTES

Some have inferred that the presence of propylene glycol in the preparation of cigarette tobacco endows it with antiseptic properties during smoking. Such is not the case, according to the *J. Am. Med. Ass'n*. The vaporized glycol is effective against bacteria in air because the vapor builds up on the cells of bacteria so that its concentration may run from 50 to 80 per cent of the entire condensed droplet, bacteria and all. Ordinarily it takes about 50 per cent propylene glycol to be bactericidal. From this, it is not outside of the realm of possibility that propylene glycol may have some bacteriostatic effect in cosmetics if used in sufficient amounts, since the moisture evaporates from the cosmetic on application to the skin, leaving the glycol. It is a thought, anyway.



## Why Good Collapsible Tubes are Sometimes Hard to Get

AMERICA'S fighting forces are using more and more Sheffalloy Tubes. As their numerical strength increases and active fighting grows, a larger percentage of our production is required to package the essential medicinal and pharmaceutical ointments our service men and women need.

The overwhelming majority of our customers understand that these are the reasons why shipments are sometimes delayed. When Uncle Sam upsets our shipping schedules (particularly on the very low or unrated orders) be assured we *appreciate* your patience and consideration. We'll bend every effort to ship your tubes as quickly as we can. Your waiting will be amply rewarded by the greater product protection given by these tougher "Sheffield Process" Tubes!

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THE WILCO COMPANY, 6800 MCKINLEY AVENUE, LOS ANGELES, CAL.



## CITRIC SUBSTITUTES

A couple of new citric acid substitutes for use in foods and beverages are clear liquids. They replace citric acid practically pound for pound. There is no restriction on their availability.

## LABS GET AA-1 PRIORITY

Serial numbered laboratories doing research only or research for the Military or Lend-Lease automatically get an AA-1 priority rating for buying equipment needed for maintenance or as operating supplies. Non-numbered laboratories carry an AA-2 rating under CMP-5. See your local WPB branch for details.

## SHELLAC SUBSTITUTE

The Department of Agriculture has scored again. This time it has developed a thermoplastic resin much like shellac. It will probably find much use in laminated paper and cellophane for increased waterproofing properties. It is being carried through the pilot-plant stage with cooperation of industry.

## CORROSION RESISTING COATING

Another coating material is available for painting on to surfaces susceptible to corrosion. It stands up against acids, alkalis, oils, gasoline, alcohols, etc., where so many other coatings have failed. Films are moisture resisting, flexible, tough, non-toxic, tasteless and odorless among other properties. While forced drying at 250 deg. F. is most desirable, air drying will also work. Here is a chance to protect your manufacturing and processing equipment at a low cost, particularly if you are unable to get replacements. It may be brushed, dipped or sprayed on; it is available in clear, white, black, gray and green colors.

## Use of Zinc Oxide Permitted in Canada

Use of zinc oxide as an ingredient of talcum powder, face cream and other cosmetics will be permitted for the first time since late in 1941, the Hon. C. D. Howe, Minister of Munitions and Supply, announced recently.

Cosmetic manufacturers will be allowed an annual quota of one-half of what they used in the year 1940.

The relaxation of restrictions on zinc has been made possible by the great improvement in the shipping picture.

"With the lessening of shipping losses much valuable material, both finished or unfinished, is being conserved," Mr. Howe said. "The zinc position of the United Nations has thus been eased slightly, but not enough to permit the removal of the basic restrictions."

# Questions and Answers

## 469 SHOE POLISH PRESERVATIVE

*Q.: I read an article in your magazine about phenylmercuric salts as preservatives. I am now using a preservative in a shoe polish, but it alters the shade. Please give me the supplier's name and tell me how much to use in a gallon of product.*

S. L.—ALABAMA.

A.: If you will look in the advertising pages of the AMERICAN PERFUMER you will find the supplier's name for phenylmercuric compounds. Anyway it is being sent to you under separate cover. In use, it will take 1 ounce of the phenylmercuric salt in a total of every 50,000 ounces of finished product. In your case, it would be better to use the phenylmercuric acetate. The non-medicinal grade should be all right.

## 470 FORMULA FOR BATH ESSENCE

*Q.: Can you send me a formula for what I call bath essence? I tried sulfonated castor and peanut oils, but they are too thick and have an odor of their own. I would also appreciate any information on formulating friction lotion.*

C. I.—GEORGIA.

A.: Your bath essence can be made by dissolving the amount of perfume you wish to use in a 10 per cent benzyl benzoate and make up to 100 per cent with a very light viscosity mineral oil. Color to suit. A friction lotion can be formulated along the lines you mention in your letter by using a proprietary oil sold by several suppliers whose names are sent to you under separate cover. Use as much or as little of the oil as you need, keeping the alcohol concentration at about 75 per cent.

## 471 BROMO ACID SOLVENTS

*Q.: We are interested in the newer bromo acid solvents. Are further particulars of these yet available, or will you be publishing these at a later date?*

A. H. K.—ENGLAND.

A.: The universal bromo acid solvent has been castor oil, although lipstick makers are quick to admit that castor oil is a poor solvent, but that it is a better dispersing agent, at the same time giving the lipstick a certain tackiness that is desirable. Butyl stearate is used by some, but it is likewise a poor solvent. Soaps such as triethanolamine oleate or stearate are good solvents. Then there is a host of proprietary solvents that have been on the market over the last five years or so. Some are no longer available because they were made of critical mate-

rials. Essentially, they were esters or ethers based on the liquid fatty acids or alcohols. Stearyl, cetyl and oleyl alcohols have thus found use as solvents. Sperm oil has been mentioned. But the proprietary compounds are superior to these. A group of these are mentioned in a letter sent to you separately.

## 472 METAL CLEANER

*Q.: We have been manufacturing a metal cleaner containing alcohol, pine oil, naphtha soap and sulfonated castor oil. Can you suggest a substitute for the sulfonated castor oil which will remain clear when dissolved in kerosene?*

B. C.—TEXAS.

A.: From your formula it would appear to us that your soap and sulfonated oil would not be particularly compatible and at least the sulfonated oil does not lend much value to your product. You could probably get a wetting agent of a salt-free grade which would do a much better job. The names of a few of these will be sent under separate cover. It would take considerably less of the wetting agent to do the same job. Often as little as 25 per cent will work.

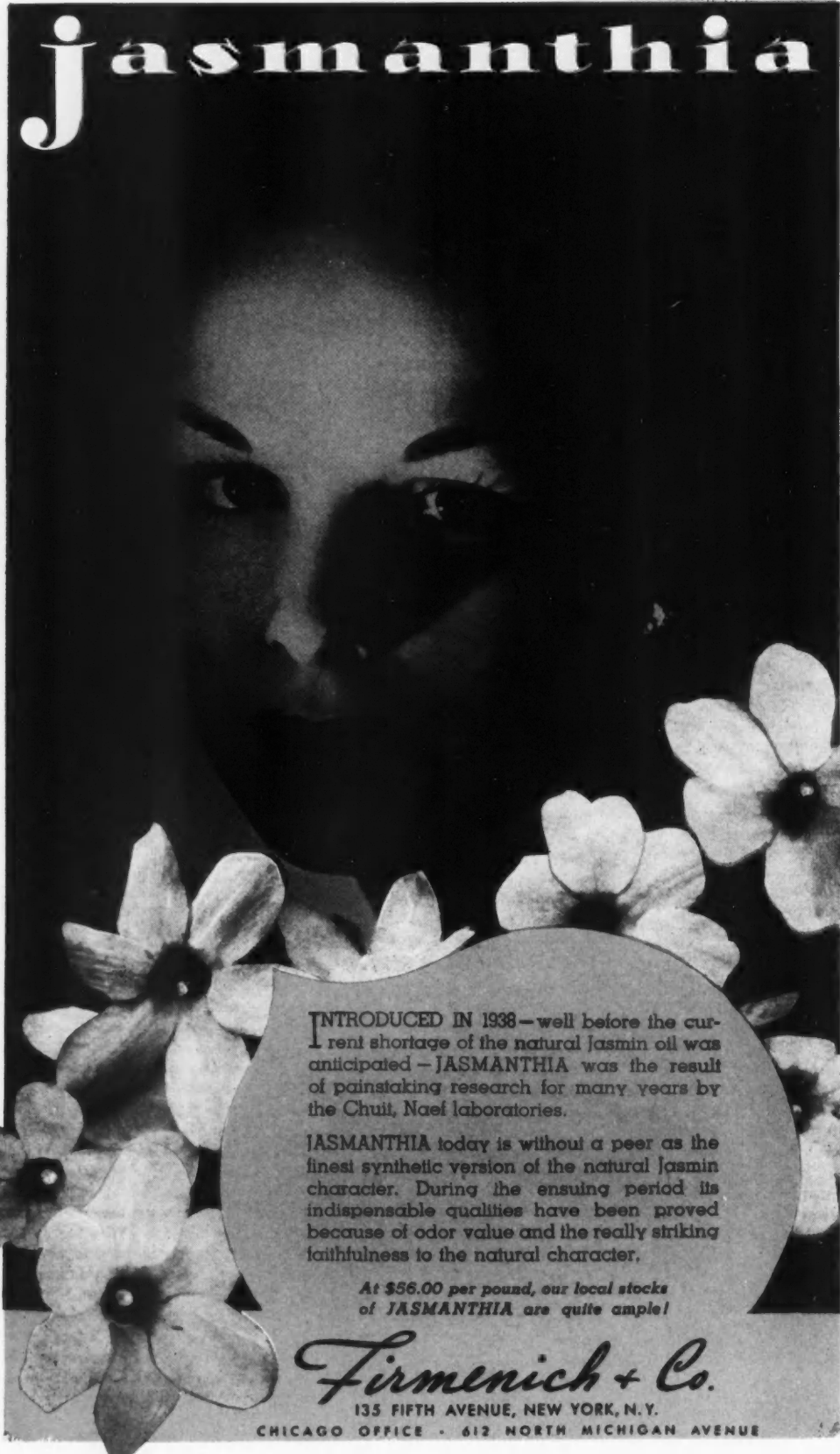
## 473 COLD AND VANISHING CREAMS

*Q.: In the September issue of the AMERICAN PERFUMER you tell a subscriber that you are sending him a sketch of a set-up for making cold and vanishing creams. Would you kindly describe the set-up and send us the same sketch?*

H. H.—MISSOURI.

A.: It is impossible to describe such a layout unless we know your exact capacity or the extent of the production you require. Ordinarily to make creams, two steam-jacketed tanks stand above a large mixing tank which is likewise steam-jacketed. The three tanks are in a mezzanine directly over the filling line. The fats and waxes are melted in one tank while the water and alkali are heated up in the other. The solutions are then strained into the large mixing tank where emulsification takes place. After this is complete, the cream is allowed to run into the hopper of the filling machine which proceeds in the usual fashion. If hot filled, a system of conveyor belts is arranged so that the jars travel back and forth a fixed number of times to allow them to cool slowly. They arrive at the end of the line where a capping apparatus supplies the closure. The jars are then labeled and packed into shipping containers.

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## Effect of Sunlight on Oil in Lemon Grass

*Results of experiment performed by the U.S.D.A. Puerto Rico Experiment Station prove that lemon grass requires full intensity of tropical sunlight for maximum growth*

by NOEMI G. ARRILLAGA and ANTONIO R. VILLAMIL

*Puerto Rico Experiment Station, Mayaguez, P. R.*

ONE of the principal problems in the study of essential oils is to determine the environmental conditions which will enable the grower and distiller to obtain the best results in quality and quantity of oil produced.

An experiment was carried out at the Puerto Rico Experiment Station of U. S. D. A. to determine the intensity of sunlight that was most beneficial to the development of lemon grass and to the production of oil of high citral content.

### EXPERIMENTAL CONDITIONS

Four randomized plots, each 20 x 30 feet, were planted under each of four approximate light intensities, full sunlight, two-thirds' sunlight, one-half sunlight and one-third sunlight, as shown in Figures 1 and 2. Intensities less than full sunlight were provided by overhead and side shading with bamboo laths appropriately spaced.

The experimental field had a gentle slope and was provided with contour ditches for uniform drainage and control of soil erosion; the soil was Catalina clay. Immediately before planting, a uniformly light application of an 8-10-4 commercial fertilizer was made to each plot, the fertilizer being placed in the bottom of furrows that marked the rows. The fertilizer was then covered to a depth of about five inches, and six root pieces of lemon grass were planted in each hill. The rows were spaced 30 inches apart and the hills 18 inches apart in the row, and there were eight rows of 20 hills each per plot. Beginning on the second day after planting and continuing at two-day intervals for a period of two weeks, all hills were inspected and

missing plants replaced. Twenty such replants were made throughout the whole field during this period in order to maintain a complete stand in all plots.

### APPEARANCE DURING GROWTH

During the first one and one-half months of growth the grass in all plots appeared to be uniform in height and color, but at the end of two months, in the plots under the full and two-thirds' sunlight treatments, growth seemed to be more normal and the grass seemed to have a lighter green color than in the one-half and one-third sunlight treatments. However, at the age of four months the plants under the one-third sunlight treatment appeared distinctly taller and thinner than those in any of the other treatments.

The grass in all plots was harvested

four times, each at the approximate age of four and one-half months. The grass from all marginal hills was discarded in order to minimize border effect and to eliminate in-so-far as possible the error from any effects of shad-

A <sub>1</sub>	D <sub>1</sub>	C <sub>1</sub>	B <sub>1</sub>
C <sub>2</sub>	B <sub>2</sub>	A <sub>2</sub>	D <sub>2</sub>
D <sub>3</sub>	A <sub>3</sub>	B <sub>3</sub>	C <sub>3</sub>
B <sub>4</sub>	C <sub>4</sub>	D <sub>4</sub>	A <sub>4</sub>

FIGURE 2—Arrangement of replicated plots in experiment to test the effect of sunlight intensity on yield of lemon grass. Letters represent treatments; figures replicates, as follows: A = full sunlight; B = 2/3 sunlight; C = 1/2 sunlight; and D, 1/3.

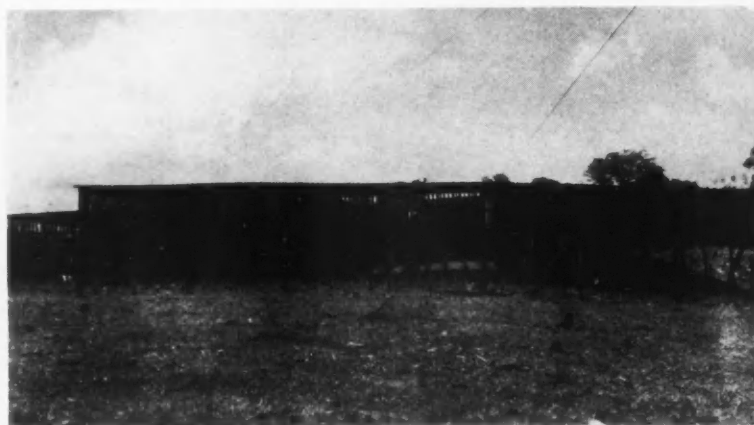


FIGURE 1—Bamboo shading laths built above plantings. Intensities less than full sunlight provided by these appropriately spaced overhead and side-shading bamboo laths.

ing in the morning and late afternoon on plots intended to have full sunlight or somewhat restricted sunlight. The area harvested in each plot was 0.01024 acre.

Duplicate grass samples of 20 pounds each were taken from each of the four plots under each treatment. The samples were cut into one-quarter inch pieces in a fodder cutter and the moisture content determined by the ordinary oven-drying method. Distillation was carried out for one and one-half hours with the grass immersed in water, the water left in the retort after the distillation of the first sample of each pair was used for distillation of the second.

The grass was grown under the same conditions and distilled and analyzed by the same methods in all four harvests.

In Table 1 are summarized the data obtained in the field as well as that on moisture content and the yields of oil and citral from the grass grown under each light intensity.

#### FIELD RESULTS

It is clearly evident that the intensity of the sunlight under which the grass was grown had a distinct influence on the amount of grass produced. For the first harvest statistical analyses showed highly significant differences among the yields produced by the various treatments. The yield of grass was almost in direct proportion to the intensity of sunlight during the period of growth.

In the second harvest, the grass grown in full sunlight continued to give the best yield. However, it is of interest to note that in the second harvest the grass grown in one-third sun-

light gave the second highest yield. Unlike the previous harvest, the yield of grass was not in proportion to the intensity of sunlight. This was partly due to the great increase in the number of ratoons in the stools growing under one-half and one-third sunlight.

Just previous to each harvest the number of stalks in the 28 stools in the center of each plot were counted and then averaged for each treatment. At the first harvest the average number of stalks per stool varied from 18 in the plots that received only one-third sunlight to 38 in those growing in full sunlight. At the second harvest, the stools in one-third sunlight averaged 31 stalks each, an increase of over 72 per cent, those in one-half sunlight averaged 28 stalks each, an increase of 33.33 per cent, and those in full sunlight 40 stalks each, or an increase of only 5.26 per cent.

In the third harvest the grass grown in full sunlight continued to give the highest yield. Similar to the first harvest, but unlike the second, the yield of grass was almost in direct proportion to the intensity of sunlight. At cutting time the grass in the stools under one-half and one-third sunlight appeared rather unthrifty in comparison with that under full sunlight and two-thirds' sunlight, where growth was good. Also in many of the plots of the one-half sunlight and the one-third sunlight treatments there were some dead stools and a large percentage of others in which only two-thirds to three-fourths of the total number of leaf stalks developed. This, of course, lowered the yield of grass under both of these treatments. The field data secured for the third harvest were ana-

lyzed by the method of analysis of variance usually employed for a Latin square design. According to the standard error, the difference in total yield of all plots in each of any two treatments would have to be at least 112.27 lbs. to be considered significant, i.e., show odds of 19 to one, and 170.08 lb. to be considered highly significant, or show odds of 99 to one, that such difference was not due to chance. There was no statistical difference in yield of grass produced by full and two-thirds' sunlight, and the one-half and one-third sunlight treatments each produced significantly less than full sunlight.

For the fourth harvest, the yields of grass were again nearly proportional to the intensity of the sunlight to which the plants were exposed. From the statistical analyses it was found that the differences were highly significant. As compared with one-third sunlight, full sunlight resulted in an increase of 255 per cent in yield of grass. During the rainy season, in spite of the excellent surface drainage provided, the soil remained wet for long periods of time under conditions of one-third and one-half sunlight. The roots of some of the plants growing under these two light conditions decayed and some of the plants died, the remainder of the plants were in poor condition. The grass under two-thirds' and full sunlight had vigorous well-developed stools.

#### LABORATORY RESULTS

In the first harvest full sunlight was the most favorable of the four intensities for the production of oil in lemon grass, the moisture content of the grass under this intensity being 76.19 per cent and the yield of oil 0.317 per cent.

Table 1—Yield of Grass, Oil and Citral from Each Harvest of Lemon Grass Grown Under Different Intensities of Sunlight

TREATMENT	MOISTURE CONTENT	GRASS YIELD PER ACRE	YIELD	FIRST HARVEST		IN OIL	CITRAL IN GRASS	CALCULATED AMOUNT PER ACRE
				OIL SPECIFIC GRAVITY	CALCULATED AMOUNT PER ACRE			
				Per cent	Pounds			
Full sunlight	76.10	28,003	0.317	0.873	88.77	61.66	0.196	54.89
2/3 "	79.99	20,690	.281	.876	58.14	71.70	.202	41.79
1/2 "	81.75	15,625	.270	.878	42.19	75.00	.203	31.72
1/3 "	87.51	11,108	.235	.879	26.10	80.01	.188	20.88
SECOND HARVEST								
Full sunlight	75.67	22,393.80	0.368	0.873	82.41	70.00	0.258	57.78
2/3 "	79.40	8,636.47	.326	.877	28.15	80.00	.261	22.54
1/2 "	81.69	14,337.16	.320	.879	45.88	74.00	.237	34.08
1/3 "	88.69	18,896.48	.335	.879	63.30	70.00	.235	44.42
THIRD HARVEST								
Full sunlight	75.96	8,459.47	0.222	0.907	18.78	72.5	0.161	13.62
2/3 "	79.60	6,042.48	.245	.916	14.80	76.5	.187	11.29
1/2 "	81.77	4,125.98	.194	.957	8.00	72.5	.141	5.82
1/3 "	88.10	2,587.89	.215	.981	5.56	65.5	.141	3.65
FOURTH HARVEST								
Full sunlight	77.00	22,033.69	0.287	0.894	63.24	71.66	0.206	45.39
2/3 "	83.17	12,390.14	.276	.896	34.20	68.00	.188	23.29
1/2 "	85.00	9,191.89	.265	.877	24.36	66.00	.175	16.09
1/3 "	90.01	6,201.17	.254	.901	15.75	70.00	.178	11.04



Table 2—Comparison of Average Yield Per Acre Per Week of Grass, Oil and Citral for First Three Harvests and for Fourth Harvest of Lemon Grass Grown Under Four Intensities of Sunlight

TREATMENT	GRASS		OIL		CITRAL	
	FIRST THREE HARVESTS Pounds	FOURTH HARVEST Pounds	FIRST THREE HARVESTS Pounds	FOURTH HARVEST Pounds	FIRST THREE HARVESTS Pounds	FOURTH HARVEST Pounds
Full sunlight	1,401.36	1,836.14	4.52	5.27	3.01	3.78
2/3 "	1,086.40	1,032.51	3.24	2.85	2.32	1.94
1/2 "	811.62	765.99	2.29	2.03	1.70	1.34
1/3 "	531.72	516.76	1.42	1.31	1.12	0.92

Table 3—Yield of Grass, Oil and Citral from all Four Harvests of Lemon Grass Grown Under Different Intensities of Sunlight

TREATMENT	MOISTURE CONTENT	YIELD PER ACRE	YIELD	OIL SPECIFIC GRAVITY	CALCULATED AMOUNT PER ACRE	IN OIL	CITRAL IN GRASS	CALCULATED AMOUNT PER ACRE
	Per Cent	Pounds	Per Cent		Pounds	Per Cent	Per Cent	Pounds
Full sunlight	76.21	80,889.96	0.313	0.882	253.19	67.73	0.212	171.49
2/3 "	80.44	58,019.10	.291	.885	168.84	74.22	.216	125.32
1/2 "	82.42	43,280.03	.278	.886	120.32	72.66	.202	87.43
1/3 "	88.46	28,533.53	.268	.892	76.47	73.51	.197	56.21

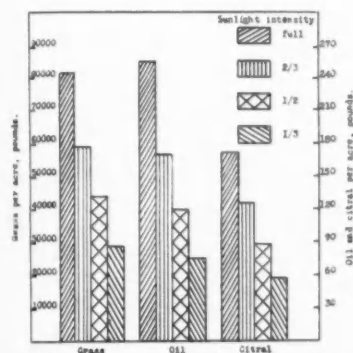


FIGURE 3—Average yield of grass, oil, and citral from four harvests of lemon grass planted under different sunlight intensities

It is evident from Table 1 that reducing the intensity of sunlight increased the moisture content and reduced the yield of oil. Although the specific gravity, an indication of citral content, varied little, the trend was inversely correlated with the intensity of the sunlight used in growing the grass. The percentage of citral in the oil gradually increased from 61.66 under full sunlight to 80.01 under one-third sunlight. There was also an increase in the percentage of citral in the grass itself as the light was diminished to one-half, ranging from 0.196 under full sunlight to 0.203 under one-half sunlight. However, even though the citral content of the oil from the grass grown under one-third sunlight was highest, i.e., 80.01 per cent, it was not high enough to compensate for the reduced yield of oil, and hence the percentage of citral in the grass under this heavily shaded condition fell to 0.188.

As observed in the first harvest, the grass grown in full sunlight contained the least amount of moisture and yielded the most oil. However, in the second harvest, the grass grown under

one-third sunlight was second in yield of oil, while the oil obtained from grass grown under two-thirds' sunlight contained the highest percentage of citral.

For the third harvest, the highest percentage yield of oil and the oil of best quality was obtained from grass grown under two-thirds' sunlight. Because of greater grass tonnage, the total yields of oil and citral were higher in full sunlight than in any other treatment.

For the fourth harvest, the yields of oil and citral were almost proportional to the intensity of sunlight. There were smaller but consistent increases in the percentage of oil in the grass, and, with one minor exception, in the percentage of citral in the grass, and a consistent decrease in moisture content of the grass with increasing light intensity.

As compared with one-third sunlight, full sunlight resulted in an increase of 13 per cent in the percentage of oil in the grass, 302 per cent in yield of oil, 16 per cent in the percentage of citral in the grass, 311 per cent in yield of citral and 17 per cent decrease in the moisture content of the grass. Differences among treatments in specific gravity of the oil and percentage of

citral in the oil were small and showed no consistent trends.

A comparison of the average yield per acre per week of grass, oil and citral for the first three harvests and for the fourth harvest is made in Table 2. It can be seen from the table that when the grass was grown under full sunlight the average yield per acre per week of grass, oil and citral was higher for the fourth harvest than for the first three harvests. However, under varying degrees of shade the reverse was true.

#### AVERAGE HARVEST YIELDS

The average yield of grass, oil and citral per acre for all four harvests combined and the corresponding averages for moisture content of the grass, percentage of oil in the grass, specific gravity of the oil, percentage of citral in the oil and percentage of citral in the grass are summarized for each of the four light intensity treatments in Table 3. The average yields per acre are shown graphically in Figure 3.

It can be seen from Table 3 that for all harvests combined there were large and consistent increases in yield of grass, oil and citral per acre with increasing light intensity, smaller but consistent increases in percentage of oil in the grass and, with one exception, in percentage of citral in the grass, and consistent decreases in moisture content of the grass. The differences in specific gravity of the oil and the percentage of citral in the oil were slight and not correlated closely with light intensity. The results for all four harvests were essentially the same as those for the fourth harvest.

Thus, it can be concluded from the results of this experiment that lemon grass requires the full intensity of tropical sunlight for its maximum development and its best production of oil.

#### "No," say Residents

A proposition whereby it was claimed the air in the Morland Avenue area of York Township, Toronto, would be "filled with sweet perfume" was rejected by the Township Council.

The proposal was made by a soap manufacturing firm who claimed that no unpleasant odors would result if the company established its plant there; that the work was done entirely with linseed oil which has a pleasant odor. Residents objected.



## Short Adages

by R. O'MATTICK

WE, TOO, have been thinking about post-war planning and wondering what this column will be like when the war is over. There will be nothing more to say about SHORTAGES, allocations, priorities, freezings and hundreds of other things, except in historical perspective. Our hope is that friendly contributors will not leave us empty-handed and that they will find things to send in for the column. But they need not wait till the war is over—they can begin right now!

\* \* \*

Most of the members of the trade will want to forget the past and start off with a fresh and new approach. They will want to forget the drums of mineral oil they laid away or the kilos of Otto of Rose or the barrels of acetophenone or whatever it was they put by for bleak days. But as years go on and things come back to normal, Dr. Rowmateral and many other "old-timers" will be telling their young aides about the war days and how you couldn't get bottles and caps and cases and alcohol and oil of caraway and this and that. And it will all seem so strange and unbelievable. And what now takes three months for five men to do with all the forms and requisitions and planning and conversations and conferences, will take three months for five men to do with two months time for golf and fishing and tennis and boating and all the numerous pleasant things that buyers and production men and suppliers of containers and colors and perfume oils delight in doing whenever they get the least pretext for relaxation.

\* \* \*

However, that is looking into the distant future and as we gaze into the crystal ball we confess the future is blurred because the once clear and limpid oil within is freezing. An icy mist also mars our vision. Everything seems to be frozen or in the process thereof.

\* \* \*

We have run into many buyers, not excluding our amiable but hot-tempered Mr. A. Goodbuy, who brag how well they are being taken care of by their suppliers because they were always such good and loyal customers. They never gave anyone, according to their autobiographies, a fluid ounce of trouble, never complained about prices, were always polite to salesmen, paid their bills on time, refrained from asking for special favors and adhered to all and sundry agreements. These buyers keep on repeating their past virtues

until they really come to believe in their existence. And some of the suppliers are talked into believing them, too. And all is well! That is most true (that all is well) when the supplier happens to have plenty of something that a buyer wants a little of very badly.

\* \* \*

But there will come a time when suppliers will sing their own song of past devotion to buyers. Some of this chanting will be based on facts and "the record" and some will be imaginary. And will the buyers remember or will they forget? Yes, it will take a very good salesman to get an order for three hundred thousand bottles from Mr. Fill because the house for whom the salesman works supplied Mr. Fill with three gross of bottles in 1943. And no ordinary representative of an essential oil firm will walk out with a contract for five hundred pounds of perfume compounds simply because Mr. Goodbuy obtained one pound of real Oak Moss during the week of the current AMERICAN PERFUMER. We are not cynical but there is a limit to how far a man can go to return a favor.

\* \* \*

New York's policewomen have recently been equipped with a black cowhide bag holding a .38 caliber pistol, a medium red lipstick and a very attractive powder-puff. Who is there to say which of these three items is the most important one? It all depends on whom she meets. One commentator claims that any day now a desperado will complain, "She pulled a lipstick on me." Perhaps, but what worries us is the thought that she will use the empty shells from the .38 for lipstick refills.

The plastics that have been turned out this year to date amount to half a billion dollars—over sixteen times that of a decade ago. Before the year is over there will be about 800,000,000 pounds of plastic resins produced. About 85 per cent of these are used for war materials, such as airplane parts, tool handles, etc., etc. The 15 per cent left over are for civilian needs. If women would stop buying umbrellas with plastic handles, plastic trays, plastic ornaments, knickknacks and whatnots there would be, according to our calculations, about 10,000,000 pounds of plastic resins available for the cosmetic business. But the danger in that kind of thought is that umbrella manufacturers, makers of plastic trays and whatnots can also do a little figuring and get 15 per cent of 800,000,000—subtract what is needed for surgical instruments, dental and electrical supplies, etc., etc., and then calculate the number of extra umbrella handles that could be made if women were to stop using cosmetic preparations. Perish the thought!

\* \* \*

In the post-war world there will be, we hope, plastic enough for all, and our ladies and lassies will walk around with plastic umbrella handles of the most wonderful kind and have jars and jars of creams with plastic (or metal if they wish) covers, and oodles and oodles of perfumes and toilet-waters in fine glass-stoppered bottles and flacons and everybody will buy everything and we shall sit back and watch the perfume and cosmetic world go by and record our observations for this column with a plastic fountain pen.



# Atmosphere and Quality Sold the Idea

*A novel idea of merchandising incorporating atmosphere and good taste was the basis of Shulton's success and has remained the predominant factor permeating every merchandising effort*

by MIRIAM GIBSON

Publicity Director, Shulton, Inc., New York, N. Y.

IN THE difficult year of 1937, it took courage to start a business. Smart merchandising was needed to make it succeed. William L. Schultz, president of Shulton, Inc., had both these requisites. With sketches of a new idea in toiletries, he took a flying trip across the country.

The packages pictured were early American in feeling; simple in design with good taste in every line; no trade name showed. At a time when toilet goods packaging and promotions were highly decorative, "fancy," chichi, he was introducing a line of bath requisites whose claim to fame was based on "atmosphere." High quality was taken for granted by all who had known William L. Schultz during the twenty-five years he had been associated with the toilet goods industry. Even the fragrance was based on the roses-and-spice scent of those early New England days when women made their own toilet water from potpourri and rose bowls, when the clipper ships sailed the high seas, bringing precious spices from the Far East.

## DECIDEDLY A QUALITY LINE

On this quick cross-country trip, Mr. Schultz sold "Atmosphere," backed by quality of merchandise contained in eye-appealing packages. There were those who said, "he's crazy to go at this thing in a big way." The story of Early American Old Spice has made them eat their words.

The packages, authentic adaptations of articles in use during the years of 1790 to 1820, were true in design, in their very simplicity. Early American floral sprays decorated the wood-veneered covering. Keynote of the line, the Old Spice lady, was adapted from a Vermont Caswell carpet hanging in the Metropolitan Museum. Many criticized the name of Early American Old Spice. "Too long," some remarked. "Too simple and at the same time cumbersome," a few commented. But William L. Schultz believed in his idea, in



William L. Schultz, founder of Shulton, Inc.

his product, in the authentically designed packages. He knew that if he gave quality to women in attractive packages that were in good taste, his products would sell. Early American Old Spice was launched on the market in September, 1937. The proof that Mr. Schultz was right has been proven in the fact that in the first four months Shulton's gross was \$77,000. In 1938, Early American Old Spice for men was launched, and in 1940, Early American Friendship's Garden for women. By the end of that year, the gross was \$3,000,000; this year, over \$4,000,000.

One of the outstanding features in introducing this line was its price level. Good taste for discriminating women was sold in dollar packages. True, a few special gift sets ran higher—up to twenty-five dollars for the special perfume and toilet water in beautifully hand-painted bottles contained in a silk quilt lined box with mirror—but the big feature was the dollar item. Authentically designed boxes for gift or home use were filled with small sizes of many items of the line—toilet water, talcum, sachet, soap, all nested in red cut paper. For a dollar, the woman was introduced to the entire line. One, the Mount Vernon set, even had a token of a decorated mirror to decorate the bedroom—incidentally, the demand for this box never has died down and only war

shortages have caused its discontinuance. Individual, regular size items sold for one dollar. Working on a small margin of profit pays dividends.

And how was this accomplished? For one thing, an advertising campaign was started, with Wesley Associates as the company's agency. Package illustration alone, with copy, sold atmosphere. Starting in class magazines, *Vogue* and *Harper's Bazaar*, today the product is advertised in 20 magazines under a budget of some one-half million dollars.

## EACH BOX A HOUSEHOLD ASSET

Merchandising in the stores was based on the same quality, simplicity and atmosphere as the idea behind the packages and the product. The packages themselves became display pieces. Every box had an after-use—selling economy, double purpose at a time when money was not "loose." For instance, the Early American Old Spice sewing box, an authentic adaptation of a sewing box of the early 1800's, was filled with toilet water, soap, dusting powder, bath salts. The contents were worth the full price of the box—\$5.00. But when the contents were removed, the box itself, sturdily built and complete with pin cushion and tray, became a useful sewing box for home use.

Another unusual idea about the line was that no trade name, no company identification appeared except in a small label on the bottom. This was necessary for reasons of government regulations. The home decoration idea was emphasized. Ads urged women to dress up their early American homes, with these authentically designed early American packages. Identification leaned on design itself, the early American sprays and Old Spice lady.

Small counter displays and window cards were designed to carry out the motifs of the line—all in the same simplicity, excellent taste and atmosphere of the packages. Stores were urged to use packages only for displays.



In addition, statement enclosures were sent out to the leading stores' customer lists. The Early American Old Spice lady in the form of a cut-out book mark, holding a blue felt "bouquet" impregnated with Old Spice fragrance, was given to stores for customers.

The company's ads carried coupons inviting readers to send in 25 cents for an "introductory" package. Within the year, this practice had to be stopped for it threatened to turn Shulton into a 25-cent market. It was impossible to keep up with the demand for this inviting packet which was designed in the same good taste and contained generous sizes of talcum powder, soap and a sachet tablet.

#### RAPID GROWTH DURING 1938

During the year of 1938 the demand for Early American Old Spice became the talk of the trade. Those buyers who had slightly scoffed at the "long name" of Early American Old Spice, who had thought the whole idea "too simple" clamored for merchandise. Drug stores screamed for merchandise. The factory, where Shulton made all its own boxes by hand, filled them with merchandise and assembled, moved three times in one year, each time to larger quarters.

#### THE MEN'S LINE LAUNCHED

In September of that year, Early American Old Spice for men was launched. The same simplicity and practical aspect, the same atmosphere that was used as an instrument in the toiletries for women, was applied to the line for men. Pottery mug holding fine quality quick-lathering shave soap was simply decorated with a blue clipper ship. Based on the mugs of olden days which had sturdy wide-spaced handles, the Old Spice mug became a joy for a man to handle. Pottery bottles, typical of the design of a medicine jar used in 1810, contained after-shave lotion, men's cologne and talcum specially darkened to blend with male complexions. They were easy for men to handle and mannish in appearance. The pottery did not slip in wet hands. The boxes themselves were wood-veneered, simply decorated with reproductions of clipper ships, sturdily built for after use to hold collar buttons and other typical masculine doodads. Again, the home use was emphasized.

That year, Shulton's gross had jumped to \$1,700,000. The problem was "how to maintain production, how to meet the demand" and all in the difficult financial years before the war when money was tight.

In that year, more statement enclosures were designed for the stores' use—consumer pamphlets showing all the items in the lines.

LEFT and BELOW: The charming and useful packages of the Early American Old Spice line. Special items are the fan described in the text; the special cabinet holding small bottles of perfume for display purposes.

#### NEW PACKAGE IN OFF-SEASON

The following February, a special new package was designed and launched with extensive advertising and publicity. It was keyed to stimulate sales for the stores at a time when the stores needed new impetus. After-inventory time in January, shelves were clean. February was not a naturally fast-selling month. The new package brought new interest. This practice has been followed every year for Early American Old Spice.

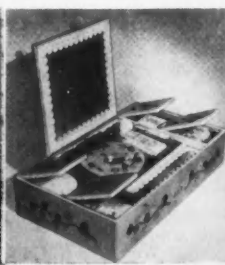
#### THE CONTEST IMPETUS

In June, the company introduced the first of its now famous Father's Day Window Display Contest for stores. \$800.00 was given in cash prizes to the winning stores. Accounts were divided into two classifications: I for department stores and specialty shops; II for drug stores. Special brochures were sent to all accounts explaining the rules of the contest, the main one being that windows must use one of three themes offered—a window display for each was offered free—and must contain only Early American Old Spice for men. Stores became enthusiastic. They reported their windows had brought amazing response in the way of dollars in their cash registers. Extensive advertising and publicity backed the stores, helped them to clear their shelves at Father's Day selling time. So successful has this contest become that Shulton has continued it each year, and last year prizes amounted to \$2,050 in War Bonds.

#### "COQUETRY FAN" PROMOTION

The summer of 1939 a special promotion on Early American Old Spice talcum was launched. With each purchase of the 50-cent or \$1.00 cylinder of talc, purchasers were presented with a "coquetry fan." Made of pink paper, the fan had five panels. Each panel gave a "rule for coquetry" as practiced in early American days. A special broadside was sent to accounts, enclosing the unique "token" and explaining the promotion. Special window cards and counter cards were prepared for stores. A newspaper advertising campaign was run in the leading papers throughout the country during July and August. Talcum sales zoomed in the accepted "slow" season for toiletries.

The following year, the same type of promotion was repeated. Another broadside was sent to accounts. Again talcum sales went up. In the war year of 1942, a Victory Fan was designed giving ten freedoms for which the country was fighting. Again broadsides were complemented with newspaper advertising and extensive publicity.—See corner lower left.





## COMPANION FRAGRANCE'S DEBUT

In the spring of 1940, Early American Friendship's Garden toilet water was introduced to the market. It was brought out as a companion fragrance to the already successful Early American Old Spice. As Early American Old Spice was based on the period of 1790 to 1820 in New England, Early American Friendship's Garden gained inspiration in design and fragrance from the deep south of the same period. The scent, floral bouquet, as a companion to tangy Old Spice was introduced in toilet water alone, to test the fragrance, to find out if women really would like it. The demand necessitated an entire line being started in the Fall of the same year. The packages again emphasized "after use" and held to the absence of trade name so boxes could be used at home.

Advertising again sold an "atmosphere"—the subtly romantic air of the deep south, romance-and-lace loveliness of southern femininity when belles were gay and soft. Where Early American Old Spice had brought forth the romance of the simple New England early days, Early American Friendship's Garden presented the lighter feeling of a southern garden. Pastel pink and blue and yellow floral sprays against a crisp white background. Paper itself was finished in such a way that a damp cloth removed surface dirt—the practical aspect again.

A generous advertising budget was put behind this new companion line. Extensive publicity told women about this gay, new floral bouquet fragrance through editorial columns in magazines and newspapers. Christmas sales that year proved that once again Shulton had hit the jack-pot of ideas.

## CONSISTENCY, PROMOTION BACKBONE

One of the outstanding merchandising features to be learned from the Shulton success is the uniformity of promotion. Everything to do with the products holds to the line of the original conception of an idea. Advertising, publicity, mailing pieces, displays, even the sales manuals for special sales girls, concentrate on selling atmosphere. With quality backing atmosphere, repeat orders are assured.

With war shortages of today of raw materials and manpower it has been necessary for Shulton to telescope its lines. Many items had to be discontinued because of the time consumed in actually making boxes as well as reduction of quantity of certain ingredients. But even with this, the company has not lost sight of the necessity to maintain its original purpose—of selling atmosphere, of giving double duty in its packages. In spite of a much reduced line, Shulton has introduced three new packages this

year. In February, true to practice, the Early American Old Spice Tissue Box was brought to the market. It contains a 50-cent tube of talcum and three toilet size cakes of soap. The box itself is a cleansing tissue dispenser. No trade name, no company identification other than actual design, mars the use of the tissue box in bathroom or on the dressing table.

Then, in May, the Friendship's Garden Bath Sticks made their debut. Again, atmosphere of soft femininity, again after use of container, again full value in bath salts were given to the consumer. The container itself may be used for paper towels in the bath, for letters on the desk, for shopping notes in the kitchen. And once more no trade name appears. And it holds to the original dollar-item idea.

Due to the success of the Early American Old Spice Tissue Box last Winter and Spring, Shulton brought out a Friendship's Garden Tissue Box last month. It has the same features as the Old Spice Tissue Box.

## DEALER COOPERATION 100 PER CENT

Always with an eye to giving every assistance possible to the dealer, two years ago Shulton distributed to accounts a paperboard cabinet, designed in the Early American Old Spice tradition. Shipped flat, it was easily assembled and sturdy enough to hold a good portion of the lines of Old Spice for men and women. It helped the drug store in particular in its continuous problem of lack of counter space, for the cabinet, six feet in height, could be used as a unit by itself. Again, atmosphere was sold for the cabinet expressed the feeling of the lines for which it was designed. Every account which placed an order of a certain amount was eligible for one of these specially constructed Shulton cabinets.

Again, this Fall, the company is supplying another help to the dealer, in the form of an Early American Old Spice dram-size perfume cabinet. This fits on the counter, is Old Spice in design. It has a glass front and holds 36 one-dram-size bottles of perfume. The back slides up to make dispensing easy. And here again every account which purchases a certain number of bottles of Old Spice perfume in one-dram-size bottles is entitled to this cabinet.

Surely Shulton's successful merchandising is proof that "If a man makes a better mousetrap, all the world beats a track to his door." In the case of Shulton and William L. Schultz, it was the man who presented a new, a different idea, who stuck to his guns, and who was smart enough to merchandise it properly. Integrity, plus value and definiteness of purpose, all wrapped up in "atmosphere," made an idea into a living success.



RIGHT: The lovely delicate Early American Friendship Garden items, packaged in pink with yellow flowers. BELOW: The men's line sturdy and substantial with conservative blue ships for decoration are useful also.



# British Toilet Goods Regulations

by OUR BRITISH CORRESPONDENT

**T**HE new Toilet Preparations Order already outlined in the *AMERICAN PERFUMER* has prompted the National Pharmaceutical Union in the interests of its members, retail proprietor pharmacists, to issue as a circular to be mounted for ready reference, a summary of the position as it effects them. The provisions of related regulations, where necessary, are also covered. A general caution is included. War-time control of toilet preparations may not have been enforced in the past with the assiduity that the public interest seems to necessitate in present circumstances. It is, it is added, undeniable that an extensive black market, the odium of which chemists have had to share, has grown up. This latest order provides a much more stringent control over the channels in which the real black market has flourished and it is understood that the Board of Trade policy of enforcement will in future be severe. It is of prime importance, the caution continues, that the chemists should not only observe strictly obligations old and new laid on them, but they should be on their guard against unwillingly assisting in the creation of a new black market in raw materials. Materials for manufacture, it is advised, should be bought only in recognized trade channels; the purchase of "sets" of materials with instructions how to make them into the finished article is to be deprecated particularly, as not infrequently the ultimate product cannot be sold with any credit to the vendor who must accept responsibility as the manufacturer. Suppliers of any materials suitable for the manufacture of toilet articles must obtain a written declaration from their customers to the effect that the customer concerned is entitled to manufacture toilet preparations, if they have reasonable cause to believe that it is for toilet manufacturers that the materials are required.

## ORDER CONTROLS ALL TOILETRIES

The circular points out that the order controls the manufacture and sale of all perfumery and toilet preparations whether medicated or not, except dentifrices for artificial or natural teeth, shaving soap, shaving cream, solid and liquid soaps controlled under the Soap Rationing Order and shampoos.

The retailer may purchase toilet preparations produced by Board of Trade registered toilet manufacturers or packed by a Board of Trade licensed packer. He may purchase direct or through a wholesaler or factor and if

he does so he must follow these rules:

1. Satisfy himself that the goods have been produced by a manufacturer or packer who is registered or licensed by the Board of Trade under the order;

2. Satisfy himself that the goods are labelled individually on the innermost container with the name of the registered manufacturer or licensed packer;

3. Obtain a detailed invoice for the purchase and retain it for 12 months from the date of purchase;

4. Not break bulk and pre-pack ready-for-sale—a sale from bulk may be made only on or after a request for the product has been made by a customer;

5. Sell off before January 1, 1944, all stocks of nail polish, nail-polish removers or other toilet products containing more than one-half per cent by weight of certain prohibited solvents. Any stocks on hand on January 1, 1944, will be frozen;

6. Sell off before March 1, 1944, all stocks of hair dressings including brilliantine and hair creams which contain any petroleum products. Stocks in hand on that date will also be frozen.

The above notes refer entirely to the products of registered manufacturers and licensed packers. The quota method of control over the output of registered manufacturers has now been replaced by a system of individual licensing. It is anticipated that the quantities of goods available for retail distribution will remain at approximately the same level as hitherto. No doubt the manufacturers and wholesalers will continue to operate their own equitable rationing arrangements.

## RETAILER-MANUFACTURER RULES

The retailer may manufacture toilet goods, except prohibited articles, provided he was making toilet goods prior to Oct. 1, 1941. If he does so he must:

1. Sell the products by retail only; sales to hairdressers even for salon use are not permitted;

2. Sell the products only on the premises on which they are manufactured. If desired to sell at premises other than where made, application must be made to the Board of Trade for a "premises license";

3. Label the products with his name and address and if the name under which the article is sold does not by itself indicate the article is a toilet product, the container must be marked with the letters "T.P.";

4. Not sell over the whole of his business treated as one unit, more than

£41, 13 shilling, 4 pence worth (retail value) in any one month of his "own manufacture" toilet products unless he is registered for purchase tax purposes;

5. At the time of sale, make a written record under the appropriate date of each individual sale of "own manufacture" toilet products. The record must be kept available for inspection by official inspectors. A minimum period of six months is recommended for the retention of the record. A record book at the counter with a series of pages allocated to each line and size of "own manufacture" toilet preparations in which a date entry can be made at the time of sale, monthly totals being collated and carried forward at some convenient regular interval, is suggested in the circular as a practical way of meeting his new requirement.

6. Register for purchase tax purpose through the local Customs and Excise Officer if the aggregate value of his manufactures of toilet goods and of medicinal goods, excluding dispensed medicines, exceeds £41, 13 shilling, 4 pence retail in any month. A record of all manufacturing activities in chargeable goods should be kept so that at any time evidence is available to show whether or not the person concerned should be registered for purchase tax purposes.

## MANUFACTURE AND LABELING

It is not in order to buy concentrated perfume essences even though subject to 100 per cent purchase tax as a raw material, and to simply repack. Some manufacturing process other than packing must be applied and the product then counts as "own manufacture" for all purposes. The retailer may not sell what are really toilet articles under a title or description which is intended to avoid them being classed as toilet articles; e.g., nail polish masquerading under title "lacquer" or nail polish remover under description "film cement"; nor may he make any toilet goods containing more than one-half per cent by weight of acetone, butyl alcohol, butyl acetate, ethyl acetate, amyl acetate, amyl alcohol or methanol. Any such articles made before January 1, 1943, when this prohibition came into force must be sold before January 1, 1944, or remain frozen. No toilet-hairdressing containing any petroleum product, including all hard and soft paraffins, technical oil, white mineral oil and other grades of petroleum sold under trade names such as "spindle oil" or "slab oil" may be made. Chemists who hold a stock of more than five gallons of such oils obtained before January 1, 1943, may be licensed to use them up in toilet-hairdressings.



# Determination of Lead in Collapsible Tubes\*

*Polarographic method is regarded as satisfactory for routine commercial analyses . . . Shows absorption of lead in products sealed in tubes . . . Wax coating of tubes offers protection*

by DAVID F. MENARD† ‡

THE use of tin in collapsible tubes has been drastically reduced since early in 1942. Analytical methods for the determination of lead in the contents of such tubes are of considerable importance because that metal is the only substitute for tin in general use at present.

## RESTRICTIONS ON THE USE OF TIN

The initial restriction of the War Production Board on the use of tin for collapsible tubes was made in January, 1942<sup>1</sup>. Since then further restrictions have appeared at approximately quarterly intervals. At the time of writing this paper the restrictions are as follows<sup>2</sup>:

1. Proscription of a few very particular pharmaceuticals such as ophthalmic and sulfonamide preparations, Class I products, which may be packaged in tubes of pure tin.

2. Reduction of the tin content of collapsible tubes for a large group of preparations by limiting all medicinals and pharmaceuticals, Class II products other than Class I, to a maximum of 7.5 per cent tin; limiting dental cleaning preparations, Class III products, to a maximum of three per cent tin.

3. Proscription of tin in any form for packaging the remainder. Examples of these "non-essential" products include cosmetics, shaving preparations and liquid cements.

## SUBSTITUTE METALS FOR TIN

In the manufacture of tubes containing 1.5 per cent to 10 per cent tin, the customary practice has been to use lead

slugs having a layer of tin on all surfaces. These slugs are then extruded into tubes in the usual manner. The resulting "tin-coated lead" tubes have a coating of tin on both the interior and exterior surfaces and have the same shiny appearance as a pure tin tube. But these coatings are discontinuous almost without exception, although the discontinuity is difficult to discern with the naked eye on tubes containing 10 per cent tin.

One alternative has been to make tin-lead alloys containing the maximum permissible quantity of tin. This practice has not been widely adopted, however, because the alloy tubes have seldom shown any significant advantages over ordinary lead tubes in appearance or packaging qualities.

## INTERNALLY WAXED TUBES

For many products the tin coatings in 7.5 per cent tin-coated lead tubes were found to be of sufficient continuity to prevent serious absorption of lead by the contents. Restrictions or proscription of tin and the possibility of further restrictions have led to the investigation of the use of other methods to prevent lead adsorption.

At present, the most widely used method is to flush or spray a wax coating on the interior surface of lead or tin-coated lead tubes. This method of protection has been satisfactory for many products, especially preparations of an aqueous nature such as dentifrices or shaving cream.

## GENERAL ANALYSES

The analytical procedure most generally used for determining small quantities of lead is the colorimetric dithizone procedure of the Association of Official Agricultural Chemists.<sup>3</sup> This method, which is well described in the literature<sup>4, 5</sup> is based on the selective extraction of lead from aqueous ammonium citrate-cyanide solutions by a chloroformic solution of dithizone



The dithizone-lead complex thus formed is then decomposed by dilute acid and the lead determined by a colorimetric procedure with dithizone.

The metallic ions which interfere with the colorimetric method are zinc<sup>6, 7</sup>, stannous tin<sup>8, 9</sup>, bismuth and thallium. Bismuth and thallium, however, are found so rarely that they may be ignored in general. It seemed logical to the author that lead determinations could be made with reasonable accuracy on a polarograph, thus eliminating colorimetric comparisons for determining the final results as well as interference from zinc and stannous tin. In the polarographic method the tin is held in the stannic form and zinc causes no interference.<sup>10</sup> The polarographic method is not new, having been discovered about 20 years ago by J. Heyrovsky.<sup>11</sup> It is applicable to all substances which are electroreducible in the range of 0.2 v. If fine globules of mercury are dropped into specific solutions, each metallic ion produces a current discharge at definite voltages; the quantity of current thus produced, measurable on a galvanometer, is proportional to the concentration of the metallic ion. The theoretical and practical aspects of polarography have been well described by the publications of Kolthoff and Lingane.<sup>12</sup>

The method set forth in this paper is a combination of the dithizone procedure<sup>3</sup> and polarography. The isolation of lead is accomplished by the A.O.A.C. method<sup>3</sup> to the point where that element has been completely extracted with dithizone for the first time. Then the dithizone-lead complex is decomposed with dilute acid and the lead in the acid extract is determined on a polarograph.

The apparatus required for the isolation of lead is the same as used in the A.O.A.C. method.<sup>3</sup> A dropping mercury electrode instrument is suitable for the polarographic work. The reagents re-

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quire no special purification other than as suggested in the A.O.A.C. method.<sup>3</sup> Lead-free water is prepared either by redistillation in a pyrex apparatus or by the method of T. D. Gray.<sup>12</sup>

The collapsible tubes utilized to package the several varieties of products were prepared early in 1941 in anticipation of restrictions on the use of tin. The present allowable quantities of tin<sup>2</sup> were over-estimated, as shown from the description of their composition in Table I:

	Per cent
Pure tin	0.2-0.4 Cu
Tin-coated lead	10 Sn
	12 Sn
Tin-lead alloy A	3 Sb
	1 Cu
	84 Pb
Tin-lead alloy B	6 Sn
for nitrocellulose	94 Pb
cements only	
Silver-lead alloy C	1 Ag
for mascara only	3 Sb
	96 Pb
Lead	97 Pb
	3 Sb

All these tubes were made both with and without internal wax coating, except in the instances of tin, alloy B and alloy C tubes. The wax used was a commercial grade of a brown amorphous petrolatum wax, m. p. 155 deg. F. Some of the products were also packaged in glass jars for control samples. The products packaged in these tubes were tooth paste, brushless shaving cream, lather shaving cream, vaginal jelly, scalp cream, mascara, nitrocellulose cement and several varieties of ointments. In all cases the tubes were filled and closed by commercial tube fillers.

#### INCUBATION AND SAMPLING

Except as indicated elsewhere in this paper, the tubes were all incubated for three months at 100 deg. F., assumed to be equivalent to a year's storage on store shelves in temperate climates.<sup>13</sup> Then the contents of the tubes were extruded into ashing casseroles by squeezing the tubes flat until they were nearly empty. The samples thus taken generally weighed 15-35 gm.

#### ASHING AND SOLUTION OF ASH

Some of the products required special methods of charring. Solvents were removed from nitrocellulose cement by evaporation on a steam bath. The nitrocellulose was then decomposed with one c.c. of nitric acid per gm. of original sample on a steam bath. Most other products were dehydrated several hours in a 110 deg. C. oven followed by charring on a hot plate or over a small flame. The lather shaving creams foamed so vigorously at 110 deg. C.

that they were partially dehydrated at 80 deg. to 100 deg. C. followed by charring directly over a small flame. Considerable caution was necessary to prevent overheating and flashing of petrolatum-base ointments. Brushless shaving cream and analgesic balm required about three-hour evaporation at 150 deg. C. to prevent spattering. After ashing

same sintered glass funnel. The residues in the casseroles were then leached with hot 50 per cent sodium hydroxide, hydrochloric acid and water in succession, adding these washings directly to the filtrate.

#### EXTRACTION WITH DITHIZONE

This step was also carried out according to the A.O.A.C. method. If the second extraction with 20 c.c. of dithizone solution of 0.1 gm. dithizone per 1000 c.c. of chloroform remained bright red, indicating a large quantity of lead present, the next extraction was made with 20 c.c. of dithizone solution, of 1.0 gm. dithizone per 1000 c.c. of chloroform.

#### REMOVAL OF LEAD

In many instances the lead was incompletely extracted from the dithizone complex with one 110-c.c. portion of one per cent nitric acid.<sup>14</sup> Extraction with dilute hydrochloric acid was also found to be incomplete. Where three or four 40-c.c. portions of one per cent nitric acid were used instead of one 110-c.c. portion, all the lead was brought into the aqueous phase. This finding agrees with recent results of Schultz and Goldberg.<sup>15</sup>

The combined acid extracts were evaporated just to dryness on a hot plate over a low flame. Where too much heat was used, the residue was difficult to dissolve. If the residue was not dry, the results on the polarograph were poor. Direct determination of the lead in the acid extracts gave very erratic results on the polarograph. Where the lead content of a sample was high as indicated in its dithizone extraction, the acid extract was diluted to 200 c.c. in a pyrex volumetric flask and an aliquot, usually 50 c.c. was evaporated to dryness.

#### POLAROGRAPHIC ANALYSIS OF LEAD

The residue in a 100-150 c.c. beaker was dissolved in 4.0 c.c. of 0.13 *M* potassium chloride and poured directly into the cell of the polarograph. The beaker was then rinsed in order with 4.0 c.c. of 0.13 *M* potassium chloride, 3.0 c.c. of 0.13 *M* potassium chloride plus 1.0 c.c. of water and 3.0 c.c. of 0.13 *M* potassium chloride. These solutions were all added to the cell. The addition of two drops of one per cent nitric acid to the first or second potassium chloride rinse solution assisted in dissolving difficult samples. Then 2.0 c.c. of cadmium chloride "pilot ion" solution, 90 micrograms Cd per c.c., was added from a measuring pipette, followed by four to six drops of freshly prepared four per cent gelatin solution. The pH was adjusted to three—pH test paper—with one per cent nitric acid

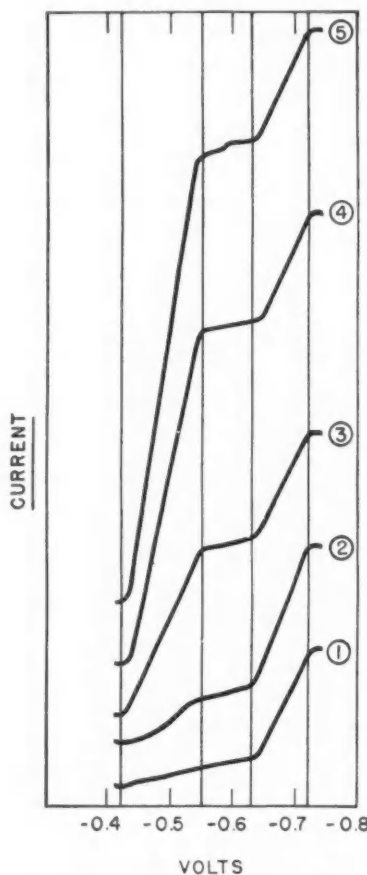


Fig. 1—1. Blank on solutions used. 2. Blank on jelly containing 24 micrograms lead. 3. Same jelly plus 100 micrograms lead. 4. Same jelly plus 200 micrograms lead. 5. Same jelly plus 300 micrograms lead.

several hours at not over 500 deg. C. the A.O.A.C. method<sup>3</sup> for dissolving the sample was followed. The ash was treated with 2 to 3 c.c. of "ash aid," followed by ashing for 30 minutes at 500 deg. This treatment was repeated using 2 to 3 c.c. of nitric acid. The residual material was usually soluble in hydrochloric acid and contained no silica so that dehydration with perchloric acid was unnecessary. The hydrochloric acid solution was filtered through a sintered glass funnel and the casserole leaching procedure of the A.O.A.C. was continued with 10 c.c. each of hydrochloric acid, hydrochloric acid-citric acid and 40 per cent ammonium acetate, filtering each through the

and nitrogen was bubbled through the cell for at least 10 minutes. During this time the cell temperature was adjusted to 25 deg. C., plus or minus 0.5 deg.

Table II—Micrograms Lead

ADDED	FOUND
0	2
100	102
200	204
400	403

The usual polarographic determination of both lead and cadmium was

minima and maxima points more definitely. The cadmium maximum was seldom well defined.

#### CALCULATION OF RESULTS

The Pb/Cd ratio was determined from the following galvanometer readings:

amps. at —0.550 v.      amps. at —0.420 v.  
amps. at —0.720 v.      amps. at —0.630 v.

the average Pb/Cd ratio was taken from determinations at full, half and

one-fifth sensitivities on the polarograph. Where the lead content was unusually large causing the galvanometer to swing far off the scale, a reading at one-tenth sensitivity was substituted for full sensitivity. Figure 1 illustrates typical current-voltage relationships.

Similar determinations were made on lather shaving cream containing known added quantities of lead. The results are shown in Table II.

From results on other products containing known added quantities of lead and from reports of other workers<sup>10, 11</sup> this polarographic method is regarded as accurate to plus or minus five per cent. It should be satisfactory for routine commercial analyses of the contents of collapsible tubes.

Actual recoveries of lead obtained in the analysis of 25 products are given in Table III.

Control samples of some products were taken as soon as received. The lead contents are given in Table IV.

In some products of an acidic nature, such as vaginal jellies, the lead absorption was higher in the tin-coated lead tubes than in plain lead tubes. This difference might be explained by the assumption that, under these conditions, a tin-lead electrolytic couple was set up which was more active than lead alone.

Several important manufacturing variables which influence the absorption of lead have not been taken into consideration in this paper. Two of these

Table III—Total Lead, Parts per Million, in Tubes—See Table I

PRODUCT	TIN	TIN- COATED LEAD	TIN- COATED LEAD WAXED	ALLOY A	ALLOY A WAXED	LEAD	LEAD WAXED
Tooth paste A	3	4	2	4	4	10	7
Tooth paste B	3	..	..	..	..	14	..
Lather shaving cream A	4	1	5	59	23	54	39
Lather shaving cream B	1	..	..	..	..	34	..
Brushless shaving cream A	3	..	4	..	..	..	..
Brushless shaving cream B	1	..	..	..	..	12	..
Vaginal jelly A	10	45	4	30	7	36	9
Vaginal jelly B	14	57	4	71	14	34	..
Scalp cream A	8	20	13	56	11	79	12
Scalp cream B	..	..	..	..	..	25	4
Nitrocellulose cement A	4	32	..	756 <sup>a</sup>	..	..	..
Nitrocellulose cement B	..	10	4	412 <sup>a</sup>	..	..	..
Burn ointment A	0.2	21	4	18	13	45	35
Burn ointment B	..	3 <sup>b</sup>	2 <sup>b</sup>	..	..	..	..
U. S. P. ammoniated mercury ointment	..	..	3 <sup>c</sup>	..	..	..	1 <sup>c</sup>
U. S. P. blue ointment	..	..	7 <sup>c</sup>	..	..	..	3 <sup>c</sup>
U. S. P. boric acid ointment	..	..	1 <sup>c</sup>	..	..	..	3 <sup>c</sup>
U. S. P. white petrolatum	..	..	2 <sup>c</sup>	..	..	..	3 <sup>c</sup>
N. F. Lassar's paste with salicylic acid	..	..	2 <sup>c</sup>	..	..	..	3 <sup>c</sup>
N. F. Ichthammol	..	..	10 <sup>c</sup>	..	..	..	12 <sup>c</sup>
Ichthylol	..	..	4 <sup>c</sup>	..	..	..	6 <sup>c</sup>
Analgesic balm	..	..	5 <sup>c</sup>	..	..	..	74 <sup>c</sup>
Black mascara	0	..	..	132 <sup>b</sup>	..	14	3
Blue mascara	8	..	..	50 <sup>b</sup>	..	51	17
Brown mascara	10	..	..	105 <sup>b</sup>	..	39	19.6

<sup>a</sup> The tubes for nitrocellulose cement were alloy B instead of alloy A.

<sup>b</sup> The tubes for mascara were alloy C instead of alloy A.

<sup>c</sup> The tin-coated lead tubes for these ointments contained 7.5 per cent tin. The wax used for lining them and the corresponding lead tubes was a mixture of 75 per cent "ceresin," white paraffin m. p. 135 deg. F., and 25 per cent white petrolatum. The tubes containing the ointments were stored for one year at moderate room temperature, instead of three months at 100 deg. F.

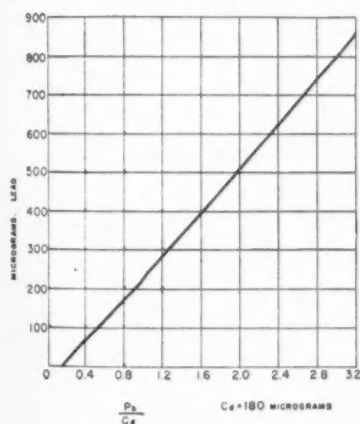


Figure 2

then made as described by Feicht, Schrenck and Brown.<sup>10</sup> The minima-maxima range of the lead curve was generally found between —0.420 v. and —0.550 v., and the cadmium between —0.630 v. and —0.720 v. Two readings were taken at 0.010-v. intervals on both sides of these voltages to locate the

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Table IV—Lead (Parts per Million)

PRODUCT	CONTAINER GLASS	TIN TUBE
Tooth paste A	..	2
Tooth paste B	3	..
Lather shaving cream B	1	..
Brushless shaving cream A	..	1
Brushless shaving cream B	1	..
Vaginal jelly A	0.05	..
Scalp cream A	..	7
Scalp cream B	4	..
Nitrocellulose cement A	..	2
Nitrocellulose cement B	4	..
Burn ointment A	..	0.2
Burn ointment B	0.7	..
Blue mascara	6	..

variables are the thickness of the wax coating and the nature of the wax used. Since 1941, when these tubes were prepared, marked improvement has been made in both the composition of the wax and film thickness. For example, one ointment investigated was packaged in 7.5 per cent tin-coated lead tubes having no internal coating, a low melting ordinary petroleum wax and a special tube wax, m. p. 165 deg. F.; the lead absorbed by this inactive ointment was five p. p. m. in the bare tube, three p. p. m. in the tube coated with low m. p. wax and one p. p. m. in the tube coated with the special wax. The low m. p. wax dissolved completely in the ointment but the special wax was insoluble.

# The Buying Habits of the Great Middle Class

*This survey covers the age group of women up to thirty years . . . These are the years of youth and early married life when cosmetics are in demand to prevent signs of fading*

THE PAST COUPLE of years have witnessed a shifting in cosmetic buying habits that has been watched with considerable interest and apprehension by manufacturers and advertising personnel. The great number of women who formerly had never known any cosmetics, or at the most, a powder, have come out of their seclusion, to work in factories, stores, and offices where cosmetics are a common by-word.

This coupled with the better known

great Middle Class Market is the most important one today, and will play an important part in the business growth after the war.

In a recent survey made by Dell Publishing Co., Inc., of their three and one-half million readers, an interesting and important fact was emphasized—that "nationally advertised brands received a greater share of the market in two-thirds of the classifications listed. This substantiates our belief

that usually the favored brands reflect advertising efforts directed to the middle class market which buys the bulk of advertised products."

## ANALYSIS OF CHART

The accompanying chart shows the results obtained from this survey as to price of cosmetics and place of purchase. This chart, it must be emphasized, is confined almost entirely to women between the ages of 22 and 30.

### WHAT PRICE THEY PAY

### WHERE THEY BUY

CLASSIFICATIONS	10c & under Per cent	11-25c Per cent	26-50c Per cent	51-75c Per cent	76c-\$1.00 Per cent	Over \$1.00 Per cent	Grand Total Per cent	Dept. Store Per cent	Drug Store Per cent	5 & 10c Store Per cent	Miscellaneous Per cent	Grand Total Per cent	Per cent Using
Astringents	11.6	8.7	16.8	9.0	39.0	14.9	100.0	26.2	43.5	16.3	14.0	100.0	18.1
Bath Salts, Softener	9.5	14.7	17.6	14.7	37.0	6.5	100.0	33.1	33.7	19.2	14.0	100.0	34.6
Bleach or Freckle Cream	24.8	17.9	23.1	11.1	18.8	4.3	100.0	17.5	38.6	36.8	7.1	100.0	6.2
Brilliantine	50.0	18.8	17.3	6.9	5.0	2.0	100.0	11.4	32.2	48.0	8.4	100.0	15.7
Cleansing, All Purpose or Cold Cream	16.1	22.7	25.2	9.2	20.4	6.4	100.0	18.7	36.1	39.8	5.4	100.0	84.3
Cleansing Tissue	23.7	63.7	11.3	0.8	0.4	0.1	100.0	11.5	34.9	39.8	13.8	100.0	79.9
Cuticle Softener	77.5	10.2	7.6	3.9	0.8	0.0	100.0	10.7	18.5	66.0	4.8	100.0	29.3
Dentifrice (Liquid)	37.3	38.6	22.8	1.0	0.3	0.0	100.0	5.9	41.9	49.4	2.8	100.0	17.2
Deodorant	30.7	15.6	44.3	7.3	1.8	0.3	100.0	10.6	37.6	47.6	4.2	100.0	81.7
Eye Shadow	72.2	5.7	11.0	2.9	7.2	1.0	100.0	11.8	18.5	67.8	1.9	100.0	11.1
Eye Wash	16.4	22.5	35.4	17.5	7.9	0.3	100.0	5.1	81.0	13.0	0.9	100.0	22.6
Eye-brow Pencil	81.0	7.5	8.8	0.4	1.9	0.4	100.0	6.5	18.0	73.9	1.6	100.0	27.6
Face Powder	18.1	14.2	11.8	4.4	41.4	10.1	100.0	23.7	38.7	31.6	6.0	100.0	94.6
Hair Oil	38.4	25.6	16.7	10.5	7.1	1.7	100.0	8.3	42.1	41.7	7.9	100.0	14.0
Hair Rinse	52.2	34.2	9.4	2.6	1.6	0.0	100.0	7.7	36.4	45.4	10.5	100.0	17.4
Hair Tonic	15.4	12.1	33.8	14.5	20.0	4.2	100.0	9.0	58.6	24.1	8.3	100.0	14.6
Hand Cream	21.1	20.5	32.1	11.0	12.5	2.8	100.0	14.7	33.4	34.2	17.7	100.0	30.4
Hand Lotion	23.8	20.8	34.0	6.5	13.3	1.6	100.0	14.7	33.4	34.2	17.7	100.0	81.3
Leg Make Up	28.2	21.7	12.4	5.6	24.5	7.6	100.0	29.7	22.3	46.8	1.2	100.0	16.4
Lipstick	23.0	10.3	18.2	12.4	30.7	5.4	100.0	24.0	36.4	30.4	9.2	100.0	92.4
Mascara (Cake)	75.1	6.5	6.3	3.8	6.7	1.6	100.0	8.1	19.0	71.0	1.9	100.0	25.5
Mascara (Cream)	89.6	4.8	3.1	0.7	1.8	0.0	100.0	7.4	14.5	77.1	1.0	100.0	15.6
Mascara (Cake & Cream)	80.5	5.9	5.2	2.6	4.8	1.0	100.0	7.8	17.3	73.3	1.6	100.0	41.1
Mouth Wash	13.9	31.1	33.6	13.3	7.5	0.6	100.0	5.4	68.4	21.6	4.6	100.0	57.4
Nail Polish	64.9	4.4	5.0	22.2	3.2	0.3	100.0	18.6	21.2	55.9	4.3	100.0	87.1
Nail Polish Remover	74.7	9.4	7.6	7.5	0.8	0.0	100.0	12.8	18.1	64.8	4.3	100.0	77.9
Nail Whitener	81.6	10.3	5.9	1.6	0.6	0.0	100.0	13.3	17.9	63.6	5.2	100.0	18.7
Perfume	13.4	5.1	5.8	8.7	29.6	37.4	100.0	34.6	44.0	16.6	4.8	100.0	76.1
Powder Puffs	83.1	11.5	1.9	0.4	2.8	0.3	100.0	6.4	12.0	79.3	2.3	100.0	73.0
Rouge (Cake)	32.6	10.7	30.3	13.2	11.8	1.4	100.0	20.0	34.2	36.7	9.1	100.0	68.2
Rouge (Cream)	12.8	16.0	18.8	10.5	31.4	10.5	100.0	29.9	27.8	27.8	14.5	100.0	11.5
Shampoo	26.2	17.6	29.9	10.6	13.3	2.4	100.0	9.9	50.3	30.1	9.7	100.0	83.0
Soap for Bath	100.0	0.0	0.0	0.0	0.0	0.0	100.0	6.3	13.4	7.2	73.1	100.0	93.6
Soap for Face & Hands	100.0	0.0	0.0	0.0	0.0	0.0	100.0	6.8	15.3	9.5	68.4	100.0	97.6
Sunburn Preventive	22.2	24.6	31.7	4.9	13.2	3.4	100.0	15.1	55.4	24.2	5.3	100.0	10.6
Sunburn Remedy	13.9	22.3	44.0	11.4	7.8	0.6	100.0	10.1	68.3	18.0	3.6	100.0	10.6
Talcum Powder	19.8	18.0	20.2	6.8	28.8	6.4	100.0	24.9	38.6	26.6	9.9	100.0	74.2
Toilet Water	4.5	5.2	10.6	5.9	48.4	25.4	100.0	38.9	41.3	9.0	10.8	100.0	51.8
Tooth Paste	16.5	31.4	48.6	2.6	0.8	0.1	100.0	5.4	60.8	25.8	8.0	100.0	69.2
Tooth Powder	23.7	31.8	35.1	3.9	4.9	0.6	100.0	5.8	60.1	29.5	4.6	100.0	47.7
Vanishing or Foundation Cream	20.2	23.6	22.6	9.4	17.0	7.2	100.0	17.0	32.3	42.0	8.7	100.0	49.8

Table courtesy Dell Publishing Co., Inc.



# Characteristics and Uses of Oil of Olibanum

*Sources and description of chemical and physical properties of oil of olibanum . . . Importance of its use in high grade perfumes, particularly oriental and flower types*

by DR. ERNEST GUENTHER

Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

**O**LIBANUM, the frankincense of the ancients, is derived from *Boswellia Carterii* Birdw. and other species of the genus *Boswellia* (fam. *Burseraceae*), a small tree growing in Somaliland and southeast Arabia. Listed according to importance the regions of production are Italian Somaliland, British Somaliland and French Somaliland, the latter producing only very small quantities of frankincense.

The bark of the tree contains schizogenous gum-oleoresin reservoirs. To collect the gum the natives incise the bark, thereby causing exudation of a white emulsion which after a time congeals into yellowish tears and drops. The tears can be picked off the bark or from the ground. The gum is collected all year round except in the rainy monsoon months, from mid-June to September, when the natives are busy with agricultural work.

## TRIESTE LEADING EXPORT CITY

Previous to the war Italian Somaliland levied an export duty on frankincense except for parcels going directly to Italy. For this reason Trieste, Italy, was the leading port for transshipping gum olibanum to other parts of Europe and to the United States. The production of French Somaliland went mostly to Marseille while that of British Somaliland and parcels smuggled out of Italian Somaliland were shipped on Arabian dhows to Aden, main port of Arabia.

With the outbreak of the war, Basra, on the Persian Gulf, became a transshipping port of gum olibanum to the United States and a few parcels seem to have reached ports of the West Mediterranean, probably on small coastal steamers or native sailing craft.

## THREE GRADES OF GUM

In Aden the gum was assorted into three qualities:

### 1. Grade I or "tears"

The finest and most carefully selected grade of white color is employed mostly in church or temple incense.

### 2. Grade II or "reddish"

It is a mixed white and reddish quality, which contains also some particles of bark.

### 3. Grade III or "dust and siftings"

Because of its low price, this is the most suitable quality for oil distillation.

By assorting the crude gum about 33 per cent of each of the three grades is obtained. The unassorted gum as it comes from the producing regions might be considered another, or fourth quality.

## PHYSICAL, CHEMICAL PROPERTIES

Gum olibanum consists of yellowish somewhat translucent roundish tears, irregular reddish lumps or agglutinated masses. Because of friction the tears are usually covered with a whitish powder; their texture is brittle, the fracture dull and waxy. The odor is aromatic, balsamic and the taste slightly bitter and acid. When triturated with water, olibanum forms a milky emulsion; alcohol dissolves about 75 per cent of the gum. The alcoholic solution after filtration can be concentrated, preferably in vacuo, and yields the so-called "resinoid olibanum," a transparent very viscous almost solid mass which, however, is soluble in alcohol and essential oils.

The essential or volatile oil can be extracted from the gum by steam distillation, the yield varying from five to nine per cent. Distilling gum olibanum of our own importation in our French factory (Seillans, Var.) we obtained oil yields of from six to seven per cent.

The oil possesses an agreeable balsamic odor with a slight lemon-like by-

note. According to Gildemeister and Hoffmann<sup>1</sup>, the constants of olibanum oil vary between the following limits:

Specific Gravity at 15° C	0.872 to 0.892
Optical Rotation	The oils distilled previous to 1903 were laevo-rotatory, up to -17°; since then the oils show dextro-rotation, up to +35°
Refractive Index at 20° C	1.471 to 1.482
Acid Value	Up to 3
Ester Value	5 to 16
Ester Value After Acetylation	28 to 48
Solubility	Soluble in 3.5 to 6 volumes of 90 per cent alcohol, sometimes with slight turbidity.

During recent years the constants of olibanum oil have undergone changes. The cause is not clear; perhaps the gum is collected from a different plant variety or in regions which previously had not been exploited, or the gum reaches the market faster.

Messrs. A. Chiris<sup>2</sup> report on an oil of somewhat abnormal constants. The specific gravity and the alcohol content were very high, the solubility good, the odor fine.

Specific Gravity at 15° C	0.9404
Optical Rotation at 20° C	+44° 6'
Refractive Index at 20° C	1.4849
Acid Value	2.52
Ester Value	12.63
Ester Value After Formylation	165.53
Solubility	Soluble in 1 volume of 80 per cent alcohol.

Messrs. Schimmel and Co.<sup>3</sup> reporting that the constants of olibanum oils (yield 3.3 to 10.4 per cent) had changed during the previous years,

<sup>1</sup> Die Ätherischen Öle, 3rd Ed., Vol. III, p. 158.

<sup>2</sup> Les Parfums de France 15 (1927), 147.

<sup>3</sup> Ber. Schimmel & Co., 1939, 88.



suggested that the limits, therefore, should be modified as follows:

Specific Gravity at 15°C	0.8652 to 0.8862
Optical Rotation	-26°3' to +34°37'
Refractive Index at 20°C	1.46954 to 1.47740
Acid Value	Up to 1.9
Ester Value	3.7 to 16.8
Ester Value After Acetylation	21 to 47.6
Solubility	Soluble in 4 to 6.2 volumes and more of 90 per cent alcohol.

Oils distilled during recent years in our Seillans, (Var., France), and Clifton, (New Jersey) factories from imported gum olibanum showed the following constants:

Specific Gravity at 15°C	0.875 to 0.895, in one case 0.917
Optical Rotation	+25°48' to +34°50'
Refractive Index	1.4710 to 1.4784
Saponification Value	5.6 to 13.1, in one case 28.0
Solubility at 20°C	Soluble in 0.5 volumes and more, sometimes in 4 to 5 volumes and more of 90 per cent alcohol.

#### CHEMICAL COMPOSITION

The results of various investigations on the chemistry of olibanum oil are incomplete and quite contradictory due to the fact that probably the different workers examined oils which did not originate from the same species of *Boswellia*. This is especially true of the oxygenated constituents. As far as the hydrocarbons are concerned it is necessary to differentiate between those occurring in laevo and those in dextro-rotatory oils.

##### I. Hydrocarbons

The following terpenes and sesquiterpenes have so far been identified:

A. In laevo-rotatory oils	
<i>l</i> - $\alpha$ -pinene and dipentene	According to Wallach <sup>4</sup> .
phellandrene	
cadinene	Olibanum oil gives a positive phellandrene reaction with sodium nitrite and glacial acetic acid. Identified by Wallach <sup>5</sup> in the highest boiling fractions.

B. In a dextro-rotatory oil  
Fractionating 6000 grams of olibanum oil, the Schimmel chemists<sup>6</sup> obtained 4710 grams of terpenes and 1290 grams of higher boiling constituents. Ninety-two per cent of the terpenes boiled from 156 to 161 deg. C. at atmospheric pressure, about five per cent



Bazaar at Basra on the Persian Gulf, trans-shipping port of olibanum when war broke out.

from 161 to 163 deg. C. and about four per cent from 163 to 181 deg. C. The following compounds were identified:

*dl*-and *d*- $\alpha$ -pinene  
camphene

{ Ninety-nine per cent of the terpene fraction consisted of  $\alpha$ -pinene and camphene.

dipentene  
p-cymene

{ Only one per cent of the terpene fraction consisted of dipentene and p-cymene.

$\beta$ -pinene, phellandrene and terpinene were not present in the oil.

##### II. Oxygenated compounds

As pointed out, the findings on the chemistry of the oxygenated compounds are contradictory. The structure of the alcohol "olibanol," as described by various workers, remains unknown.

The characteristics of the alcohol,  $C_{15}H_{26}O$ , found by Haensel<sup>7</sup> and named olibanol, are very different from the olibanol,  $C_{15}H_{26}O$ , obtained under atmospheric pressure by Fromm and Autin<sup>8</sup> and both differ greatly from the  $\alpha$ -olibanol obtained in vacuo by Fromm and Klein<sup>9</sup>. The latter (B. P. 117 to 119 deg. C., at 20 mm. pressure and 210 to 211 deg. C. at atmospheric pressure;  $d_{20}^4$  0.9504) is contained as such in the oil and yields upon reduction with sodium and alcohol a dihydro-olibanol  $C_{15}H_{28}O$ .

Heating of  $\alpha$ -olibanol above its boiling point, as happens during fractionation of olibanum oil at atmospheric pressure, results in the formation of  $\beta$ -olibanol, B. P. 210 to 211 deg. C.

Fractionating another terpeneless olibanum oil in vacuo, the same authors<sup>10</sup> found a compound  $C_{15}H_{26}O$  (B. P. 114 to 116 deg. C. at 15 mm. pressure;  $d_{20}^4$  0.9502) which they named  $\gamma$ -olibanol. It cannot be reduced like

$\alpha$ -olibanol and by heating is not converted into the  $\beta$  form.

In the light of the latest investigations the oxygenated compounds of olibanum oil consist of:

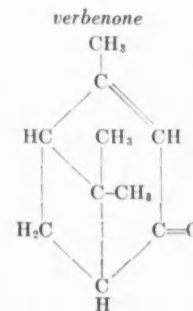
*d*-borneol

Fromm and Autin<sup>11</sup> isolated *d*-borneol from the oxidation liquors of  $\beta$ -olibanol which permits the conclusion that borneol is present in ester form.

verbenone

verbenol and other terpene alcohols

Almost ten years after the publications of Fromm and collaborators, Blumann and Schultz<sup>12</sup> showed that the so-called "olibanol" consists of a mixture of verbenone,  $C_{15}H_{24}O$ , verbenol,  $C_{15}H_{26}O$ , and other terpene alcohols, among them *d*-borneol. Verbenone was isolated from the united high boiling fractions of the oil by shaking with sodium sulfite and sodium bicarbonate solutions and identified as verbenone semicarbazone M. P. 201 to 203 deg. C. The small



quantities of terpene alcohol and sesquiterpene alcohol present in the higher fractions were separated from the hydrocarbons by the boric acid method.

<sup>4</sup> Liebig's Ann. 252 (1889), 100.  
<sup>5</sup> Ibid. 271 (1892), 297.  
<sup>6</sup> Ber. Schimmel & Co., April, 1914, 96.  
<sup>7</sup> Chem. Zentralbl., 1908, I 1837; 1908, II, 1437.  
<sup>8</sup> Liebig's Ann. 401 (1913), 253.  
<sup>9</sup> Ibid. 425 (1921), 213.  
<sup>10</sup> Ibid.  
<sup>11</sup> Op. cit.  
<sup>12</sup> Liebig's Ann. 478 (1930), 303.

The presence of verbenol is proved through the identification of verbenene (M. P. of the dibromide 71 to 72 deg. C.) which results from the cleavage of verbenol borate.

#### APPLICATION

Oil of olibanum is employed mostly in high grade perfumery, particularly in bouquets of heavy oriental and fancy flower types.

If skillfully employed, the oil gives very unique effects, incorporating soft and velvety notes that are difficult to identify. Some of the well-known French perfumes owe part of their beauty to the skillful application of this interesting oil.

While oil of olibanum is rather volatile, the resinoid is one of the most useful fixatives. Like the oil, it may be used in fancy as well as in flowery bouquets. It imparts strength and lasting tonalities without being too pronounced in its proper odor.

### Perfume Industry in the Isles of June

IF YOU FEEL the lure of the tropics and are intrigued by the art of perfumery there is an industrial opportunity awaiting you in the Isles of June, as the Bahama Islands are called.

Two premises are worth considering; first, the fact that under present world conditions no perfume is being imported from France; second, that Nassau in the Bahamas is, in spite of the war, being patronized by tourists who for years have clamored for French perfumery.

Now the Island of Eleuthera is just 60 miles east of Nassau. On this grow oleanders, jasmine and gardenias, all of which provide the essences for perfume. If these flowers were cultivated on a large scale all along the island, they could be gathered and brought to a simply constructed central factory which could be operated on a very reasonable basis. Two factories of this type are to be found in Bermuda where native perfume is made and sold. On Eleuthera running expenses would be less for labor is cheaper; on the other hand, transportation costs would be a trifle higher for Nassau is the nearest market place.

This year could be used in getting the land on Eleuthera under cultivation, building the factory, and providing the necessary equipment. An expert in the art of perfumery, with a knowledge of business management, is the one essential need. An agriculturist with training would be available on the island, and any number of willing workers, who could be trained to supervise.

& Essential Oil Review

## Hats Off to the Industry

THE COSMETIC industry has had a tough and heavy road to travel and the picture immediately ahead is not very bright. Notwithstanding this shadowy outlook, the industry has gone ahead accomplishing practically the impossible. Here are a few of the remarkable examples.

With the shortage of metals and plastics for closures something had to



Paper caps of the Waterbury Paper Box Company made to slip on and screw on.

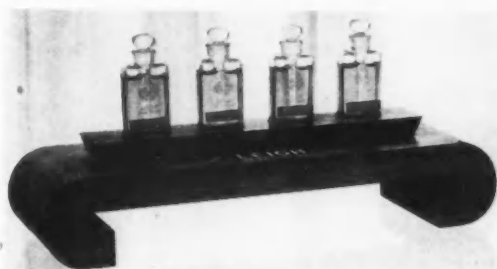
be done. The paper cap came to the rescue. This cap drawn, embossed and threaded all in one operation is the product of the Waterbury Paper Box Company.

The same shortage prevailed for lipstick and rouge cases. The ingenuity of the manufacturer was put to the test and it was not found wanting. Among the many beautiful and probably lasting developments serving as replacements for the metal product is a process developed by Creative Printmakers Group of imprinting decorative designs in colors on plastics. Here is shown what can be done by this process. The intricate design of seashells seemed at first an impossi-



Rouge and lipstick case permanently embossed on plastic by Creative Printmakers Group. Process was first used on glass.

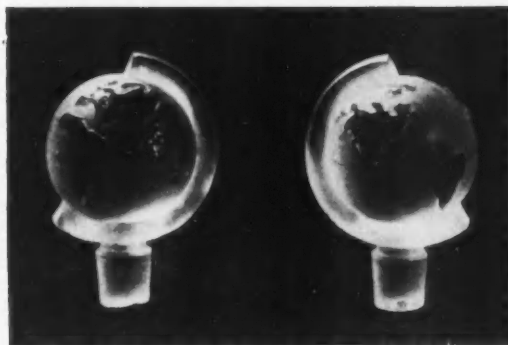
bility, but with usual American tenacity, Creative Printmakers Group, together with the artist, George Sakier, persisted until the impossible became the beautiful and artistic design permanently embossed.



Shulton, Inc.'s perfume tester, containing four bottles of its new Leigh perfumes. Bottles are securely locked into the tester stand to prevent spilling by either customer or clerk.

Another innovation is the Leigh tester—a new counter salesman for the four new Leigh perfumes. This stand from which the bottles cannot be removed, thus obviating spilling by customer or clerk, is an attractive eye-catching addition to department, drug and specialty stores.

Nothing stood in the way of Richard Sussman, president of Richard Sussman, Inc., when he wished to produce one of the most novel and unusual, as well as most decorative, perfume bottle tops we have seen. This top, capping the new perfume, Discovery, is a globe with map of the world in relief.



Two views of the unusual glass stopper on Richard Sussman, Inc.'s new perfume, Discovery. The unique stopper is a globe made of frosted glass with the map of the world in relief.

November, 1943 43

# Packaging

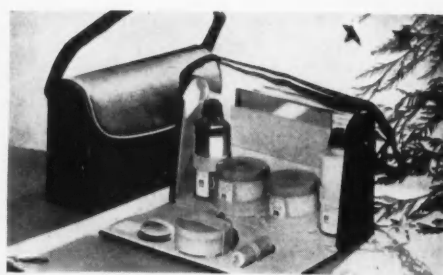
## P O R T F O L I O



DERMETICS



HENRI BENDEL



DU BARRY



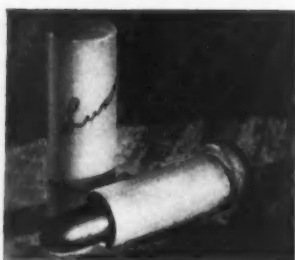
PRIMROSE HOUSE



GERMAINE MONTEIL



DOROTHY PERKINS



LUXOR



NEET

DERMETICS: New Ageless Beauty Program prescribes Soil Adsorbing Cleanser, Complexion Lotion, Complexion Dress, Blushing for the Face, Nite Emollient and automatic powder puff. Complete set in drop-lid pink box

HENRI BENDEL: Blend, the new cream rouge, is tucked inside the maroon bonnet of an attractive doll-package. Face of doll is a sponge to aid in applying. Checkmate Liquid Foundation Cream. Bonnet bows are of blue satin

DuBARRY: A fitted Christmas case made of simulated calf and containing essentials for cleansing and make-up. The case is available in two shades of tan and blue

PRIMROSE HOUSE: Made of simulated leather, this bag has ample room for hand bag accessories plus generous size containers of preparations for complete beauty care. The bag is waterproof lined

GERMAINE MONTEIL: Christmas gift set holds streamlined flacon of Bouquet Eau de Cologne and box of dusting powder with lamb's wool puff handsomely packaged in cellophane. Flesh-tinted powder may be had scented with lilac or jasnin

DOROTHY PERKINS: For the Yuletide season, an after-bath duo of Memoirs cologne in a gold-capped three-tiered bottle, accompanied by flower-adorned drum of dusting powder—Memoirs scent

LUXOR: New lipstick container made of durable wood is impregnated with a chemical to seal pores of wood against absorption of moisture. Containers are finished with clear lacquer. The lipstick is available in five popular shades

NEET: This cream deodorant and antiperspirant in a new container of glass with metal lid. Shaded blue background on the lid emphasizes blue and white letters



LENTHERIC



LEIGH



DOROTHY PERKINS



MARVELOUS



WYNCHASE



HARRIET HUBBARD AYER



COURIELLI



SUZANNE



EDNA WALLACE HOPPER



KOPAL

LENTHERIC: Set of miniatures holds three replicas of perfume originals — A Bientot, Tweed and Confetti. A nosegay of flowers peeps through opening in the pale blue box

LEIGH: Four new American perfumes—Risque, for the daring; Heartbeat, when hearts are high; Dulcinea, for true love's sake; Poetic Dream, for sheer enchantment. Each comes in a clear glass bottle with penny stopper

DOROTHY PERKINS: A new ivory satin-lined package holds sparkling Conquest perfume

MARVELOUS: Three-piece set of rouge, lipstick and face powder, a Christmas package

WYNCHASE: Hairid and Odorid, newly packaged in Hazel-Atlas Glass jars and lids. Printed labels are brown, accented in white

HARRIET HUBBARD AYER: Foot treatment set includes Foot Cream, Foot Lotion and booklet of foot massage and exercise instructions

COURIELLI: Moonlight Mist Perfume Powder, a dry perfume for use directly on skin or in accompanying rayon satin envelopes for accessories. Powder comes in blue apothecary jar with a spatula to aid application

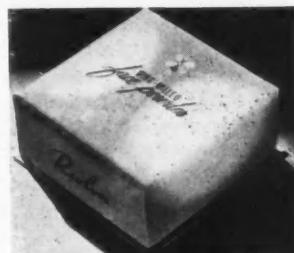
SUZANNE: New gift-size package of Bath Essence. Plastic stopper prevents leakage

EDNA WALLACE HOPPER: Improved formula of Dry Skin Cream in glass jar with metal lid

KOPAL: Cosmetic for the teeth in a new war-time package. The folding carton is replaced by a set-up box for conservation

REVLON: Windmilled Face Powder, designed to remain "color-fresh and color-true" Box contains color chart for harmonizing lipstick and nail polish shades with powder

LOR-ODO: Under-arm deodorant in bar form is launched in paper package. Scented for women, special bar deodorant for men



REVLON



LOR-ODO



# Technical Abstracts from Scientific Literature

*These brief abstracts listed provide a convenient key to current scientific literature of the world on perfumes, cosmetics, toilet preparations, soaps and dentifrices*

by MAISON G. DENAVARRE

**Acacia Arabica Produced in Southern India, A Study of the Gum of.** A. Rangaswami, *Indian Journ. Pharm.*, **4**, 128-131, 1942.—The results of qualitative and quantitative examinations show that the gum of *Acacia arabica* can be used as a substitute for the gum of *Acacia senegal*. Samples of the gum consisted of rounded and ovoid tears, one-half cm. in diameter, pale yellow in color, odorless but having a bland and mucilaginous taste. The samples were almost entirely soluble in water; the aqueous solutions gave no precipitate with lead acetate. Tests for tannin were negative, as were those for starch and dextrin. Quantitative determinations showed 18 per cent moisture and 1.79 per cent ash, of which 52.2 per cent was calcium oxide and 19.7 per cent magnesium oxide. A 10 per cent w/v aqueous solution of *A. arabica* gum had a viscosity 3.6 times that of similar solution of acacia B.P. under the same conditions. All samples showed a slightly acid reaction in water-10 Gm. requiring 1.1 c.c. 0.1 N alkali for neutralization.

**The Chemistry of Fat Spoilage XIV. Iron as an Active Constituent of the Antioxygen Complex of Oatmeal,** K. Taufel and R. Muller, *Biochem Z.*, **310**, 152-9, 1941; *Fette u. Seifen*, **48**, 669, 1941.—Although the catalase activity of oatmeal is small, when it was shaken with oxidized olive oil the peroxide value of the oil was reduced markedly. This effect was reversibly inhibited or at least reduced by cyanide. This result speaks for the participation of catalase or a catalase-like substance in the antioxidant system of oatmeal. The iron content of active extracts of oatmeal made with

lipoid solvents was 0.02-0.12 per cent. The extracts with the largest amounts of iron were most effective in lowering the peroxide value of oxidized oils. A phosphatide and protein are also concerned in antioxidant system.

**Process for Making Polish,** U. S. Pat. 2,322,066.—The process of making a polish which consists in boiling about one-quarter pound of comminuted castile soap in about one cu. pt. water until fluid soap is obtained, then pouring the fluid soap into about 6¼ pounds of whiting together with about 1½ ounces of aqua ammonia, one ounce of olive oil, one-half ounce of oil of sassafras, then thoroughly mixing and kneading the resultant mixture until a relatively stiff moldable consistency is obtained. (*Soap and San. Chem.*, **19**, 8, 65.)

**Cellulose Derivatives, Reactions of the,** W. Swallow and T. D. Whittel, *Pharm Journ.*, **148**, 107, 1942.—In using the water soluble cellulose derivatives as suspending and emulsifying agents, experiments show incompatibilities which led the authors to make a series of tests with various reagents, as shown in the accompanying table. Records of positive results have been graded from + representing a slight or delayed precipitate, to +++ a voluminous or immediate precipitate.

REAGENT	WFZ CELLOFAS	WLD CELLOFAS	444 P.M.B.	S.L. 400 TYLOSE	S.L. 1000 TYLOSE
Benzoic acid 1/1000	...	...	...	...	...
Borax 3%	...	...	...	...	...
Boric Acid 3%	...	...	...	...	...
Copper sulfate 2%	+++	...	+++	...	...
Glycerin	...	...	...	...	+++
Magnesium sulfate 50%	...	...	...	+++	...
p-chloro-m-xylenol 1/3500	...	...	...	...	...
Phenylmercuric nitrate 1/1000	+++	...	+++	+	...
Sodium chloride 18%	...	...	...	...	...
Tannic acid 5%	...	+++	...	+++	+++
Zinc sulfate 10%	...	...	...	...	...

**Oil from Citrus Fruits, Obtaining,** U. S. Pat. 2,294,198.—Apparatus is described, and a method of operation is employed which involves puncturing the oil cells of the flavedo of citrus fruit by rolling the fruit over an abrading surface, reducing the pressure of the fruit against such surface by immersing the surface and fruit in a liquid such as water, removing the fruit from the liquid and separating the dispersed citrus oil from the liquid as by centrifuging.

**Emulsion Formation,** K. Pospelova and P. Rehbindler, *Acta Physiochim. U.S.S.R.*, **16**, 71039 (in English), *Soap and San. Chem.*, **XIX**, No. 7, 61.—Phase diagrams are worked out for the systems hydrocarbon, oil, soap of sulfonated castor oil sodium oleate, or soap of naphthenic acid. The line separating the region of soluble oils from that of emulsions is located. The state of dispersion and stability of emulsions are measured as a function of the composition of the emulsion forming oil and the soaps present. The phase inversion of soap in oil on the addition of water or alcohol is discussed. The amount of water required depends on the degree of saponification of the acids in the system. The discontinuous inversion can be followed by measuring the electric conductivity of the mixture.





## The Cocoa Industry of Middle America

*Middle America could be the largest producer of cocoa in the world . . . The Far East has developed its cocoa production until it surpasses Middle America by two to one*

**C**OCOA, LIKE RUBBER, is indigenous to the American tropics. Like rubber, it is a pertinent instance of a great crop which has been lifted bodily from the Western Hemisphere and re-established half-way round the globe from its homeland. Cocoa was planted in Colonial Africa where an extremely low standard of living spelled greater profits to the producer. As a result, in the case of both products, the United States came to depend more and more on far distant sources, with the concomitant decline of the Western Hemisphere crop in world trade. The war has demonstrated the disastrous consequences of allowing essential crops to move thousands of miles away when they could be conveniently and safely located at our very doorstep, according to the Middle America Information Bureau, conducted by United Fruit Co.

### SHIFTING PRODUCTION

Until 1900 tropical America accounted for more than 80 per cent of the world's cocoa crop, but by 1925 this hemisphere produced only 32 per cent, and by 1938 African exports equalled about two-thirds of the world's exports, while Java and other Far East tropics were also important exporters.

Cocoa cultivation was developed on an imposing scale in the Gold Coast, Nigeria, the Ivory Coast, the Cameroons, Sao Tomé and eastward to the imperial colonies of Ceylon and the Netherlands East Indies. We imported some cocoa from New Zealand, and all this started from the shipment of two burlap bags of raw cocoa beans to England in 1891!

In 1940, of the \$32,140,658 worth of cocoa beans only \$12,177,605 worth came from the Western Hemisphere countries, mainly from Brazil. Yet, according to a Pan American Union report, "The production potentialities of Latin America are sufficient to supply the United States requirements in all grades."

Although Latin American exports of cocoa have doubled in the last 30 years, they have not kept pace with the increase in other parts of the world, and Charles Morrow, in his "Central America," points out that "cocoa is the one great food crop of man whose aggregate consumption has increased five-fold during the past 35 years."

Raw cocoa beans were first brought into the United States by New England traders who bartered them for merchandise which they supplied to the countries of tropical America. As early as 1790, the imports of raw cocoa into the United States amounted to over 500,000 pounds. In 1942, 680,000,000 pounds were imported.

### QUALITY AND QUANTITY

As we said before, cocoa production in Middle America is capable of great expansion; in fact, lower Middle America is the home of the highest yielding cocoa acres in the world. In Costa Rica harvests have been raised from two to three pounds of bean pods per tree to new records of six to seven pounds. In 1922 there were 35,000 acres of cocoa planted; today there are 75,000 acres, and according to the Costa Rica Department of Agriculture, only 10 per cent of the Costa Rican land suitable for the

production of cocoa is being utilized. This in view of the fact that the flavor, texture and aroma of the Costa Rican crop, principally the *Forastero* variety, is excellent.

Nicaragua, where *Criollo* cocoa is grown—one of the finest grades and used chiefly for fine French and Swiss chocolates and superior American candies—has slipped from one of the greatest cocoa-producing countries to third greatest in the Western Hemisphere.

### INTERNATIONAL COCOA TRADE

In spite of the fact that the Old World out-produces Latin America almost two to one, New York has become the cocoa capital of the world from the standpoint of international trade. The New York Cocoa Exchange establishes buying and selling prices and margins for the entire chocolate industry.

### CULTIVATION

Linnaeus, the Swedish scientist, who devised the system of Latin botanical nomenclature still in use, bestowed on the cocoa tree the name *Theobroma cacao*, meaning "food for the gods." But the everyday name "chocolate" is of Mexican origin, from *choco*, meaning foam, and *atl*, meaning water. The Mexican Indians called the beverage they obtained from the ground seeds, mixed with water and beaten to a froth, *chocolatl*.

Actually, the native habitat of the tree is not surely known. The Amazon basin of Brazil claims it, as does the Orinoco basin of Venezuela. Middle America, too, is sometimes said to be the land of its origin.

In any case it is a beautiful tree. Tropical, exotic and small, it rarely reaches a height of more than fifteen feet, averaging thirteen feet. Its leaves are glossy and broad and blackish green.

#### **HARVESTING THE CROP**

The harvesting must be accurate. Unripe pods yield beans of inferior quality and prevent an even fermentation. When the fruit is ripe, the seeds become loose from the husks and, if shaken, can be heard rattling about. The experienced cocoa picker learns to judge the ripeness by the outer appearance of the seed pods. As the fruit ripens, the color of the latter changes: in the yellow varieties, the unripe green fruit turns yellow; in the red variety the color for the most part turns from carmine to vermilion or orange. Like citrus fruits, the beans ripen intermittently throughout the year, the heaviest harvest periods occurring about twice a year. The exact dates vary considerably with the locale. Middle American cocoa frequently requires harvest once a month, or even more often.

The pods are gathered into baskets which the women frequently carry on their heads. Balancing the baskets, deftly they walk the orchard aisles to a central clearing point where the pods are piled in open stacks and left for several days for "sweating" until they are ready to be shelled. Workers with machetes or large knives break the semi-woody shells open with two or three sharp blows. A good breaker can open as many as 500 pods an hour. The soft wet pulp and beans—about twice the size of a large kidney bean, with from twenty to fifty per pod—are then scooped out by hand. Girls and women are usually the best shellers.

#### **PROCESSING THE BEANS**

Curing the beans is also a complex and delicate task, in part because a considerable portion of the pulp clings to the bean. The older curing technique, still occasionally used, employs sweating boxes. These are open wooden boxes with bottom drains to expel the drippings of pulp and water. The best curing temperature is around 120 deg. F. It is achieved sometimes by frequent stirring under the direct heat of the tropical sun. The modern method makes use of the greater speed and efficiency provided by mechanical equipment.

The beans, once cured, are ready to be manufactured into either cocoa or chocolate. In the initial stages, the process is identical. Sieving is the first step. The beans are passed through rotating screens which remove the shells and most of the foreign substances. The

clean beans are roasted in revolving drums which turn them over and over, above a low, steady fire, until they are an even brown in color and the typical chocolate aroma rises.

The crisp beans are transferred to a machine which does a three-fold job—cracking, fanning and separating them. Then they are conveyed to mills where they are crushed between grinding stones—a revolving top stone and a stationary bottom one. Since about half the cocoa bean is oil or "butter" and since the grinding generates heat, a thick chocolate-brown liquid emerges. Allowed to cool and harden, it is a brown mass known as unsweetened chocolate.

To get cocoa, the cocoa butter must be extracted from the chocolate. The viscous brown mass is put into pots, lined with camel's hair, with vents in the bottom, and squeezed by hydraulic presses. A stream of yellow liquid flows from the vents, and we have the by-product, cocoa butter. A dry, cake-like substance remains. Another machine grinds it into a powder. The sifted powder is the cocoa of commerce, and of your table. Cocoa butter is used in many pharmaceutical and toilet preparations, but its greatest consumption is in chocolate confections.

#### **COCOA AS A CROP**

In spite of the modern mechanical processing of cocoa, it remains a family crop. In fact, it is peculiarly suited to be a "poor man's crop," since comparatively little land and capital are required. And while the cocoa trees are growing to maturity, corn, bananas and other crops can be raised on the same land.

The tree, started from seedlings, flourishes best in rich wet but well-drained soil. The "cocoa latitude" ranges from 20 degrees north to 20 degrees south or "deep tropics." And the tree will grow anywhere from sea level to 2500 feet in altitude. The young tree usually has a "mother," a mango, banana, rubber or breadfruit tree, which is planted beside the seedling cocoa tree to shelter it. The cocoa tree sometimes produces fruit in as short a time as three years. But, because young trees are weakened if allowed to fruit prematurely, the floral buds are not permitted to develop until the trees are five or six years old. The prime bearing age is between 10 and 15 years but with good care the tree may remain in bearing for half a century or longer.

#### **PRESENT CULTIVATION**

Both Costa Rica and Panama are conducting elaborate experiment stations in cocoa cultivation and processing. Experiments in grafting, budding

and breeding have already increased the yield per tree and the quality of the product. And in place of the drying yards and open stirring trays, the bulk of the new Middle American crop is being cured in mechanized refineries where artificial heat supplants an uncertain sunshine.

Cocoa is Panama's second most important crop and Costa Rica's third. In the Dominican Republic cocoa led the country's exports until sugar took first place in 1914; it retains its place as the second crop. In Haiti, one of the oldest cocoa-growing countries of the world, the crop is of secondary importance today; its quality remains first-rate. Cuba consumes about 95 per cent of its crop, as do Honduras and El Salvador.

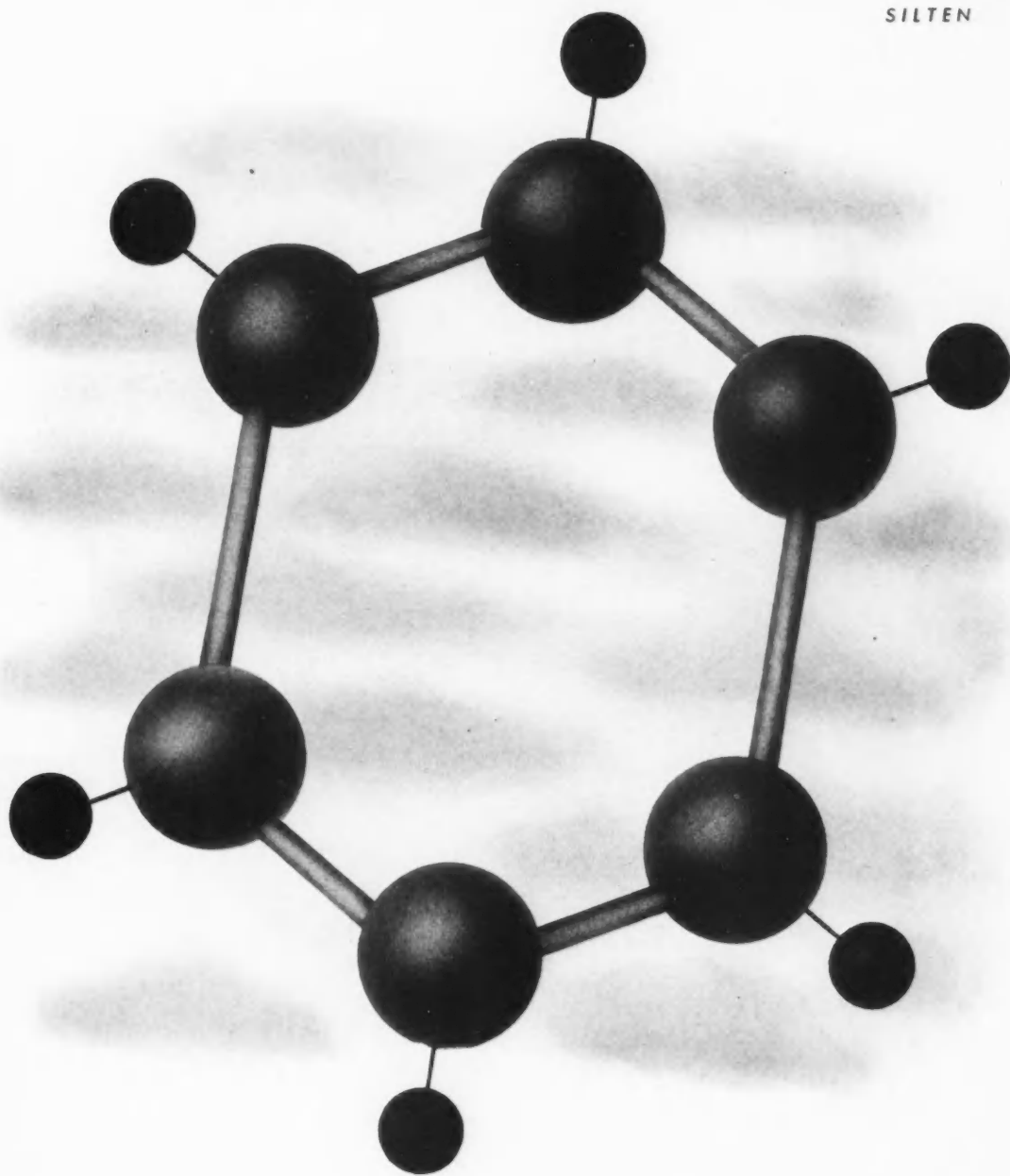
Guatemala, which grows excellent cocoa and was one of the early exporters of the crop to Spain, now imports several thousand tons annually to supplement the insufficient domestic yield. And Mexico, where the conquistadors first found it, today also imports cocoa from its neighbors—about two million pounds a year.

In South America the crop is listed as the third most important in Brazil and a premier resource of Venezuela and Ecuador.

#### **FUTURE OF COCOA**

What has the future in store for Middle American cocoa production? This is not easily predictable. We do know, however, that agencies and clearing centers for cocoa, particularly in Africa and the Netherlands East Indies, have collapsed and gone into bankruptcy. Whether the African industry and the Javan clearing-houses can survive the isolation they are now suffering is unknown. But we also know that, one after another, the principal European powers are withdrawing cocoa subsidies and that the principal European markets have either been isolated or destroyed. During the first year of the war, cocoa consumption in Europe fell to less than one-fourth of the level of the previous year, while American consumption showed an increase. But since then we, too, have gone to war and our Merchant Marine, which formerly carried coffee, bananas and cocoa to our ports, now has other tasks to perform. There have been suggestions that we tide our neighbors over during the war period with subsidies as payment for the products we are unable to transport for our use now. It may be that the future of the Latin American cocoa industry is at stake. It is certain that in cocoa there are tremendous potentialities still unexplored, with advantages to both Middle America and the United States.

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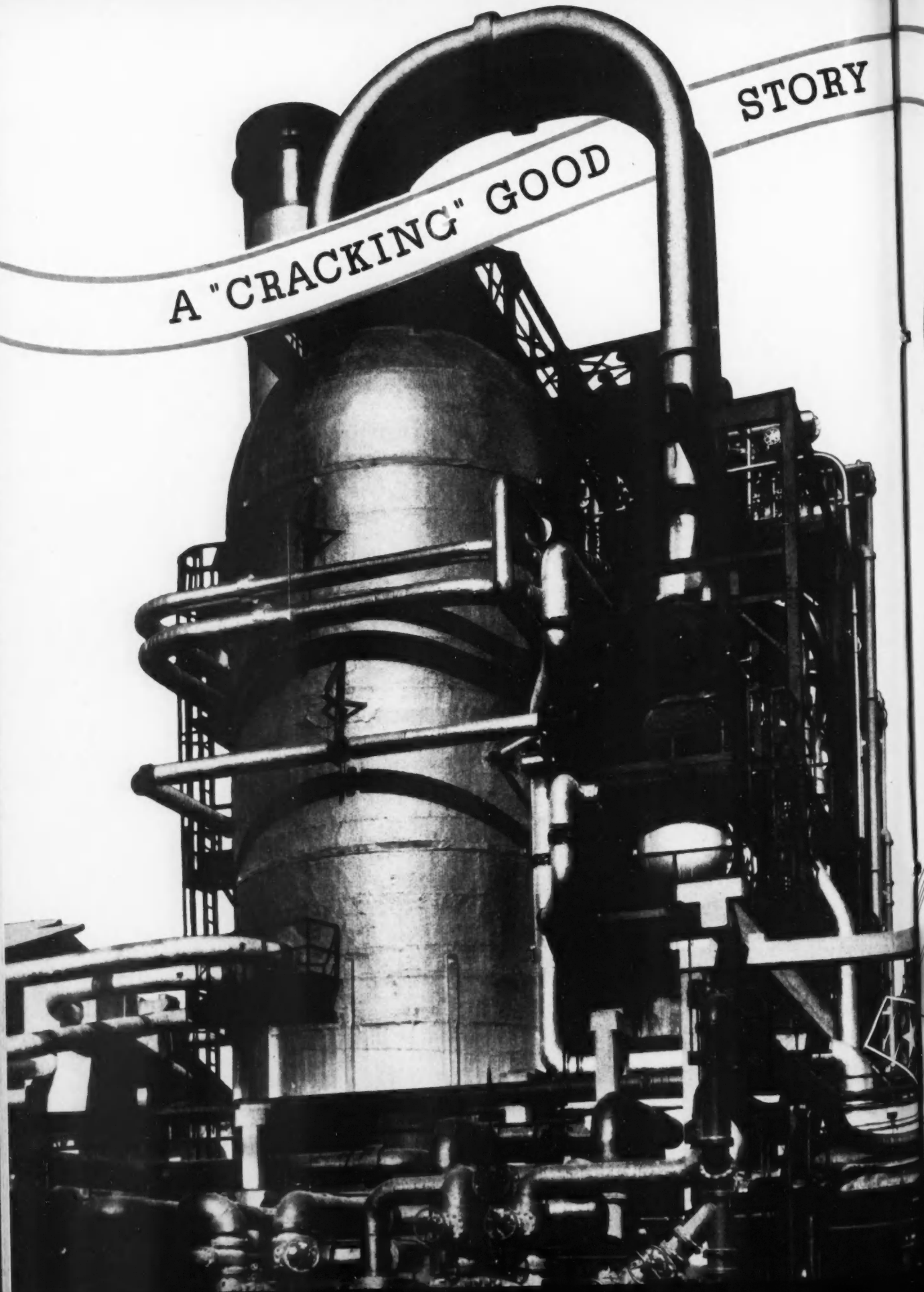
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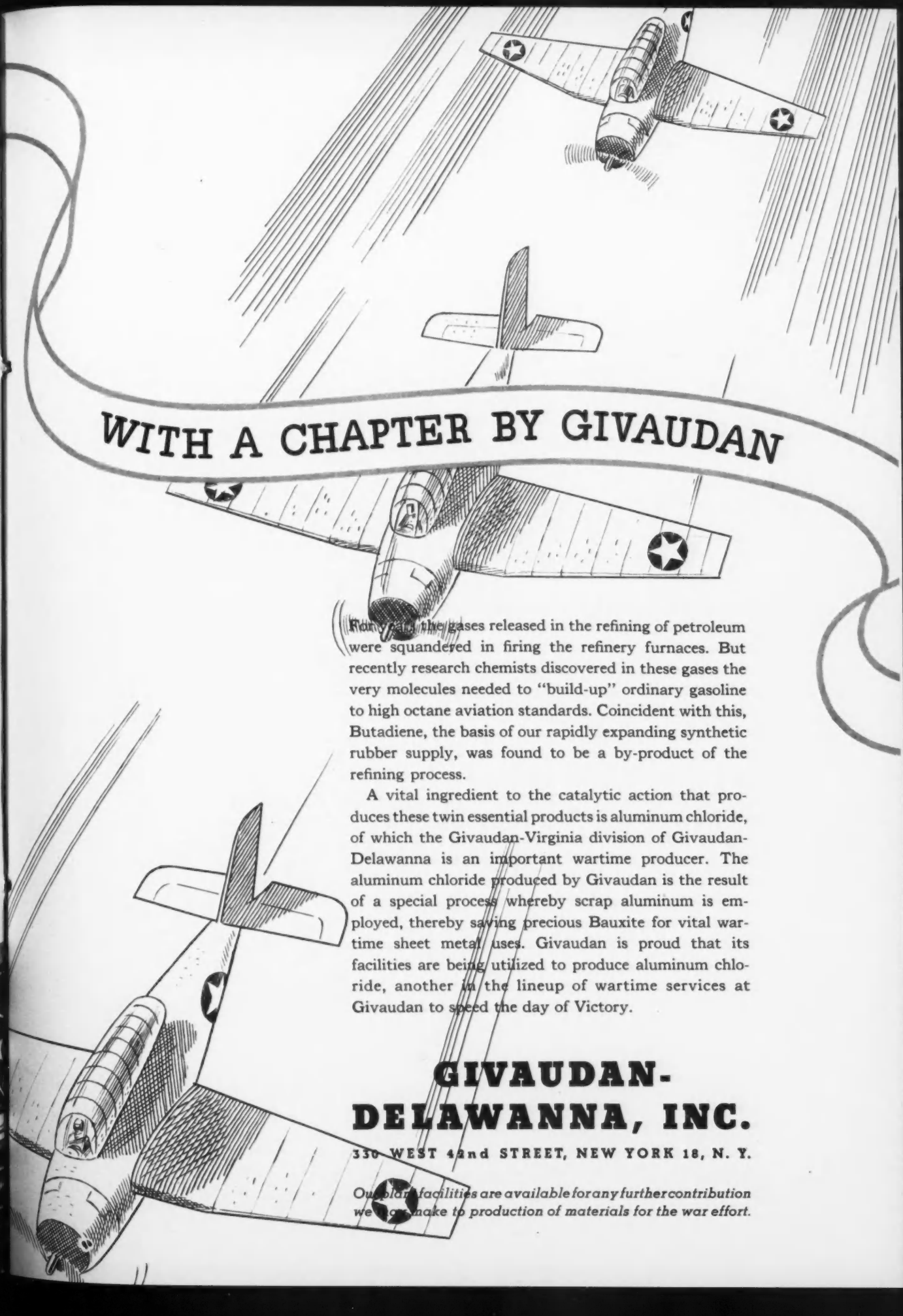
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# Basic Principles in Manufacture of Emulsion Flavors

*Scarcity of alcohol and other available solvents warrants republication of fundamental investigation at Mellon Institute in 1920 . . . Discussion of gums as emulsifiers*

by MELVIN DeGROOTE

**I**N THE actual flavor the various essential oils or other aromatic materials that are added may aid as preservatives against some organisms, but it is much safer to use glycerine. It is true, indeed, that such flavors may not develop a mould, or break, due to the destruction of the colloid, but in time they will develop an offensive odor. Such an odor is fatal to the repeat sales of the flavor. It has been found in the laboratory that twenty-five to fifty per cent of glycerine by volume is desirable in the aqueous or dispersing phase of an emulsion to assure preservation.

Other factors that will affect the breaking of an emulsion under certain conditions are filtering, heating, freezing, electrolyzing, and possibly the action of light. As far as emulsion flavors are concerned, freezing is the only one that need be considered. Precautions should be taken in the storage of emulsions, both by the manufacturer and by the user, to see that they are not exposed to freezing temperatures.

## SALEABILITY OF AN EMULSION

There are certain practical considerations that enter into the saleability of an emulsion. These may be summarized as follows:

- (1) The emulsion body should be as nearly tasteless as possible.
- (2) The emulsion body should be as nearly odorless as possible.
- (3) There should be no decomposition of the essential oil or other aromatic compound. This point merits more detailed consideration. It has often been said that emulsions prepared from the oils of citrus fruits would spoil, because the oils do not keep. This is not true in an emulsion that is properly made. The value of the addition of a fixed oil, such as cottonseed oil, to an essential oil, as oil of lemon, to preserve the latter, has been known for a long time. Likewise, a small amount of such edible oil may be added with advantage to the essen-

tial oil before it is incorporated in the emulsion.

A second objection that has been raised against emulsions is that air is beaten into them. The writer has prepared emulsions by machine-driven beating devices, so arranged as to beat in the maximum amount of air. When such emulsions are examined under the microscope, apparently no air spaces are present. The point might be brought up that globules of oil and air spaces would appear alike under the microscope. This has been tested by adding an oil-soluble red dye to the oil phase before preparing the emulsion. In this case, the oil drops appear red, and the air spaces assumed a white color. Practically no air could be discovered enclosed in the emulsion.

Sometimes when the body of an emulsion—due to absence of the proper preservative or other reason—has been subjected to bacterial action, a foreign odor develops and masks the true aroma. This odor or change in odor is interpreted as being due to the terbinthination of the essential oil, whereas the oil itself may be just as fragrant as when it was first added.

- (4) There must be no decomposition of the vehicle.
- (5) The emulsion should mix readily with water or milk.
- (6) It should not develop a foreign odor or taste on baking.
- (7) It should not be toxic or injurious in any way.
- (8) The emulsion should not dry out on the sides of the bottle or form a thick skin on the surface. The hygroscopic power of glycerine tends to prevent this trouble in formulas where it is employed.
- (9) It should be properly labeled as regards directions for use.
- (10) The labeling of the emulsion and the composition should be such as to meet state and federal laws.

A point that may now present itself to the reader is whether or not one

formula can be devised that will meet all requirements. The answer is in the negative because it has been demonstrated that no fixed or absolutely definite laws are available to govern all cases of emulsions that may arise.

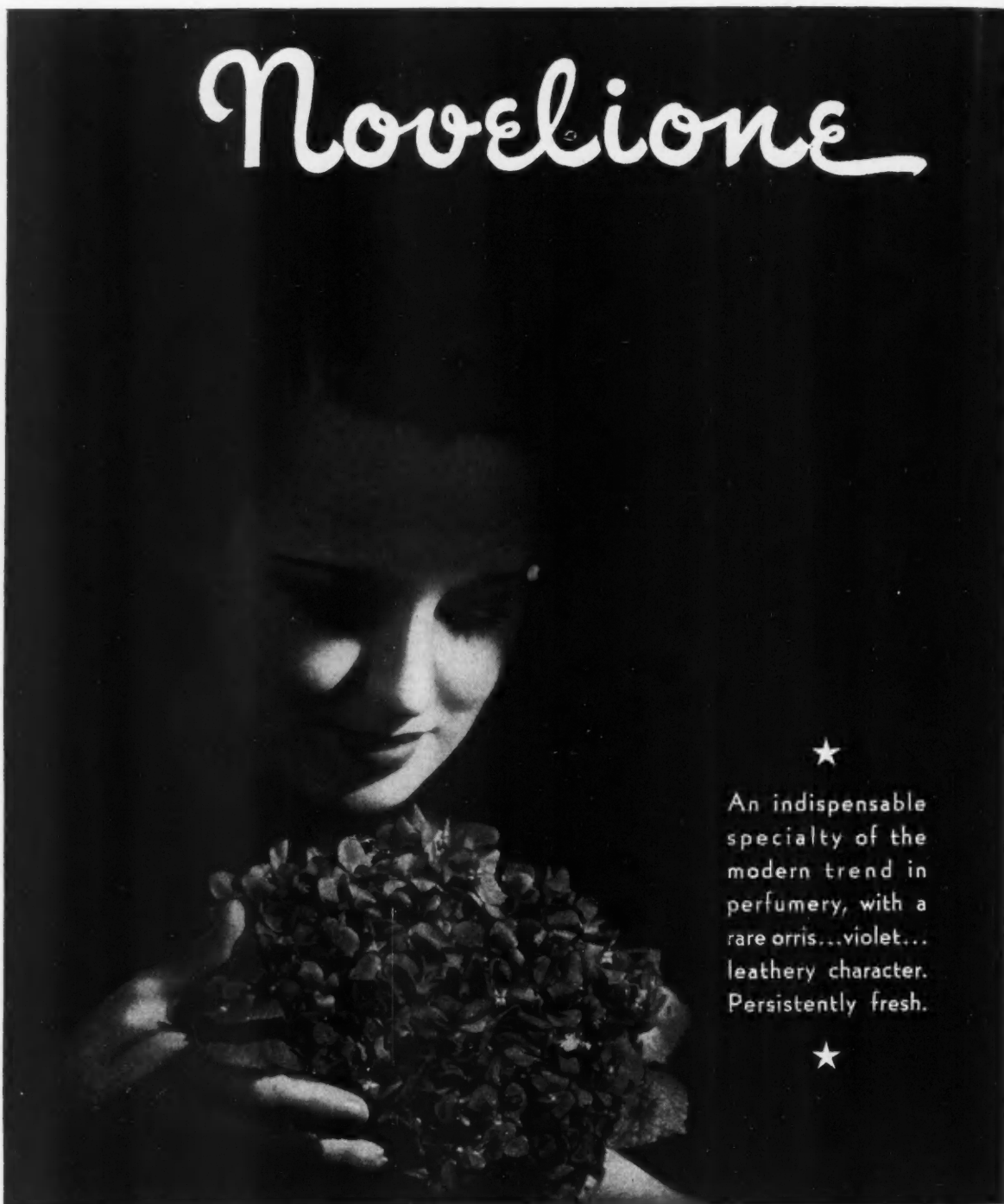
## FORMULAS FOR VARIED USES

It is more important to remember that emulsions cater to a large variety of uses, and several individual types are necessary to cover the entire field. An emulsion may be prepared containing about four-tenths per cent of terpeneless oil of lemon and be perfectly satisfactory for household use. At the same time, there may be a demand for a lemon emulsion containing fifty per cent of oil of lemon. It is obvious that two different formulas may be necessary. A fairly viscous emulsion can be employed in a two-pound bottle for the confectionery trade, because such a bottle has a sufficiently wide mouth. The same emulsion will hardly pour from a two-ounce bottle. Likewise, the viscosity may be high in the case of a tube flavor because the pressure against the collapsible sides will force the material through the aperture. A certain type of emulsion may be suitable for dry material, such as vanillin and coumarin, and prove unsatisfactory for an essential oil. One manufacturer may prefer a white opaque appearance for emulsions, whereas another may desire a yellow translucent effect. It has been the purpose of this article to attempt to give a logical discussion of the various factors affecting manufacture, sale, permanency and use of emulsion flavors. Each manufacturer may be able to modify or correct his formula so as to adapt his needs to better advantage or possibly use some adaptation of the various formulas given herein.

## SUGGESTIONS FOR RESEARCH

Flavor manufacturers should encourage and support intensive chemical research in order to improve and manu-

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facture their products more intelligently and economically. Such investigations should include:

(1) Establishment of chemical and physical standards for the various raw materials that enter into the manufacture of the emulsions.

(2) Establishment of definite and specific standards of strength for various grades of emulsions, to which the different manufacturers should conform.

(3) Establishment of critical ratios for various gums and essential oils should be made.

(4) Standards as to permanency of emulsions should be developed.

(5) Viscosities of various emulsions should be determined.

(6) Decomposition by micro-organisms should be studied in detail.

(7) Surface tension measurements should be made in all cases when such information might prove of value.

(8) Other colloids, in addition to those that are ordinarily used, should be studied.

(9) Various methods of manufacture should be given detailed consideration.

(10) Information should be published so as to give the public an intelligent idea as to nature of emulsion flavors.

#### SUGGESTIONS FOR MANUFACTURER

The following suggestions are made to the manufacturer of emulsion flavors:

(1) The best grade of material should be employed. It is evident that no powdered gums should be used from a doubtful source, since such materials are so easily susceptible to sophistication.

(2) Distilled water should be employed in the manufacture of emulsions.

(3) Care should be exercised in attempting to re-use old emulsions that have separated.

(4) Apparatus used for making emulsions should be mechanically efficient. Where such machines employ a revolving mixer, it is desirable that vertical paddles scrape the side.

(5) A sample bottle of emulsion should be retained from each batch in which a new supply of raw material is employed, for comparison with a standard sample.

(6) Directions for use on bottle or tube should be lucid and complete.

#### SUMMARY

(1) The importance of emulsion flavors has been discussed and the various fields in which they are used has been noted.

(2) The various advantages of gum emulsions have been given.

(3) It has been shown that an intelligent understanding of the formation of emulsions requires at least some knowledge of certain principles of colloidal chemistry. The relationship between these principles of colloidal chemistry and emulsion manufacture has been discussed briefly.

(4) The various emulsifying agents have been discussed in quite considerable detail.

(5) It has been shown that in order to produce a satisfactory emulsion, an efficient sub-division of the aromatic principle is necessary, and then a stabilization of the emulsion that has been thus produced.

(6) The factors affecting the stabilization of an emulsion have been discussed.

(7) The factors affecting the breaking of an emulsion have been discussed.

(8) The practical considerations that enter into the saleability of an emulsion have been stated.

(9) Recommendations have been made for further research.

(10) Suggestions that may prove of value in practical manufacture have been given.

## Soft Drink Excise Tax

THE AMERICAN Bottlers of Carbonated Beverages Ass'n is protesting very seriously against the inclusion of an excise tax on the soft drink industry. The contention is that the tax of one cent on each five-cent bottle constitutes a tax rate of approximately 33 per cent on all bottled drinks; that the tax of \$1.00 on finished and fountain syrups represents a tax rate of approximately 80 per cent on syrups; and that the tax of 25 cents per pound on carbonic acid gas represents a tax rate of approximately 210 per cent.

Bottled soft drinks are held to be a natural five-cent seller, and the increase to six cents would place the soft drink industry at a great disadvantage with competitive industries, such as confectionery, ice cream, bakery and other similar products enjoying a five-cent market; that the consumption of the five-cent bottled soft drink is not limited to any particular economic class among our population, but from long experience the industry knows that its principal consumer field, and the largest per capita consumption of its products is normally among low-income groups, including children and the teen-age of the nation. Also it is realized that the soft drink bottler, soda fountains, soft drink stands, etc., cannot possibly absorb the tax.

It should also be borne in mind that the soft drink industry by WPB, OPA and WFA orders has had its activities already curtailed. Consumption of sugar has been curtailed to 80 per cent of the 1941 use; that bottlers' use of caps has been restricted to 70 per cent of 1941 usage and that bottle replacements have been restricted to 65 per cent of the quantity purchased during the corresponding quarter in 1942.

For these reasons the petition is being made that this excise tax be not placed on soft drinks, the consensus being that it would be an unfair tax.

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# S<sub>o</sub>ap

## Solid Soap Phases\*

*Four important separate crystalline phases exist in sodium soaps . . . These phases give rise to different properties when present in solid commercial soaps*

by R. H. FERGUSON, F. B. ROSEVEAR and R. C. STILLMAN

*The Procter & Gamble Company, Ivorydale, Ohio*

FOR OVER a decade the soap industry has had available a consistent body of theory to explain and predict the behavior of soap systems in the soap boiling process where liquid and liquid crystalline phases are involved (2, 4, 5). More recently, basic information has also become available on the peculiar phase transformations of soap at elevated temperatures, giving rise to a series of waxy and liquid-crystalline phases (16); some of them may concern soap making operations under particular conditions. On the other hand, aside from a few isolated results and some largely unsubstantiated speculations, no explanation in terms of fundamental theory has existed with respect to the physical state of the final bar and other solid soap products of the industry.

### CRYSTALLINE SODIUM SOAP PHASES

During the past several years an extensive mass of evidence has been accumulated in this laboratory to explain the behavior of solid commercial soaps in terms of phase composition and phase change. The purpose of this paper is to summarize some of the evidence which relates to the proof for the existence of four separate crystalline sodium soap phases. There has been no recognition of the existence or the im-

portance of these phases in soap products in the past, and two of the forms have not been presented hitherto as phases with distinct structures, definite properties and characteristic phase behavior.

Of the four solid soap phases, beta, delta and omega are important in the understanding of the milling, extrusion, framing and other processes for finishing soap in solid form, and of the resulting products. The fourth solid phase, alpha, exists under so limited a range of conditions as not to come within realm of most commercial soaps.

Since the ultimate identification of the crystalline structures, as well as distinctions involving waxy and liquid crystalline phases, rests on x-ray diffraction patterns, the following brief introduction is presented to show the way in which the x-ray information has been employed.

A system has been evolved whereby each of the four crystalline phases of the sodium soaps can be identified by the presence of the one or two characteristic diffraction rings listed in Table I. As will be illustrated later, these identifying spacings have been found

independent of fatty stock composition and moisture content. The constancy of these spacings is exhibited not only in single-phase patterns but in patterns containing two or even three phases, as in numerous examples showing progressive conversion of one phase into another throughout a series of successive patterns. (An abbreviated series is shown in Figure 4). This is in contrast to the progressive variation in spacing exhibited in solid solution formation.

Soap is like other materials of molecular formula containing long hydrocarbon chains in that the spacings re-

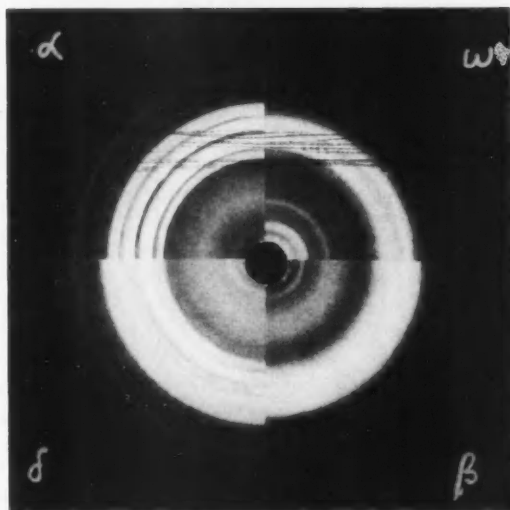


Figure 1. Quadrant comparison of short spacing rings of four crystalline phases of pure sodium stearate

Reprinted from the *Industrial and Engineering Chemistry—Industrial Edition*—Sept., 1943, pp. 1005 to 1012.

\*The latter half of this article will appear in the December issue of the *AMERICAN PERFUMER AND ESSENTIAL OIL REVIEW*.

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vealed by the diffraction patterns of crystalline forms may be divided into two distinct groups, the long and the short spacings. The ring diameters listed in Table I are selected from those arising from the short spacings—i. e., the lattice spacings in the range  $2.5\text{\AA}^{\circ}$ , involving for the most part the lateral separations between hydrocarbon chains.

While these short spacings have usually been ignored or their significance has been overlooked in studying soap, it has been found for a number of fatty derivatives that many short spacings (type  $hk0$ ) for a given phase remain constant as the chain length is varied (9, 10). This is precisely true for the soaps, as will be shown later. In studying the processing behavior of a soap in terms of phase identification, it is to the short spacings that attention should be directed.

The long spacings—i. e., the lattice distances measured perpendicularly between— $\text{COONa}$  "sheets" ( $c$  or  $c \sin \phi$ ), do reflect variation in chain length and hence in composition, since additional  $\text{CH}_2$  groups will separate the — $\text{COONa}$  "sheets" still further.

The characteristic rings listed in Table I can be used for the estimation of approximate relative proportions of solid phases, by first making up synthetic mixtures of the pure phases and noting the presence and relative intensities of the characteristic rings. For example, a mixture of beta and omega, which gives approximately equal intensities of the characteristic rings, will actually contain about 75 per cent beta and 25 per cent omega phase.

The diagrams for the four separate phases are brought together for comparison in Figure 1, where the charac-

**Table 1. Characteristic Diffraction Rings of Crystalline Phases**

	RING DIAMETER <sup>a</sup> Cm.	LATTICE SPACING $d/n, \text{\AA}^{\circ}$
Alpha	7.5 and 4.5	2.45 and 3.65
Beta	6.35	2.75
Delta	6.05 and 4.65	2.85 and 3.55
Omega	5.85	2.95

<sup>a</sup> For 5-cm. sample-to-film distance in a flat film camera.

teristic short spacing rings are shown toward the outer part of the patterns. Table II compares the numerical values for the short spacings of alpha, beta, delta, and omega sodium palmitate. In Figure 2 the corresponding long spacing rings for the four phases are contrasted.

Long spacings are also of value in identifying soap phases, but their use requires even more cautious discrimination than that of short spacings. For the complicated mixtures represented by commercial soaps, there is no apparent way of using long spacings for identifying phases in the simple man-

**Table II—Comparison of Short Spacings of Alpha, Beta, Omega and Delta Phases of Sodium Palmitate**

ALPHA IN- TENSITY D/N		BETA IN- TENSITY D/N		DELTA IN- TENSITY D/N		OMEGA IN- TENSITY D/N	
1.98	VW	1.78	VW	1.98	VW		
2.17	VW			2.15	VWV		
				2.25	W		
2.32	VW	2.35	W				
				2.39	VW		
2.45 <sup>a</sup>	M	2.48	VW				
2.55	VW			2.52	VW	2.54	VW
		2.62	VW				
		2.80 <sup>a, b</sup>	M	2.68	VW		
2.85	VW					2.85 <sup>a</sup>	M
				2.95 <sup>a</sup>	M		
3.02	M					3.02	M
3.15	VW	3.13	M			3.13	VW
				3.23	W		
		3.48	VW			3.40	VW
3.55	W					3.55 <sup>a</sup>	M
3.65 <sup>a, c</sup>	VS						
3.85	W	3.85	S			3.85	S
				3.92	M	3.92	VW
4.02	S			4.03	S		
		4.28	S	4.33	W		
4.45	W						
4.55	VS					4.55	VS
				4.68	VS		

<sup>a</sup> These rings are those used for identification purposes. In addition, to aid in comparison of patterns, spacings having an intensity of medium (M) or more are underlined.

<sup>b</sup> The difference between the value  $2.80 \text{\AA}^{\circ}$  for anhydrous sodium palmitate ( $2.78 \text{\AA}^{\circ}$  for sodium stearate in Table IV agrees within the accuracy of determination) and our identifying value  $2.75 \text{\AA}^{\circ}$  is real. The value  $2.80 \text{\AA}^{\circ}$ , however, has been found only for the anhydrous single soaps,  $2.75 \text{\AA}^{\circ}$  serving to identify hydrous sodium palmitate and all commercial beta soaps encountered, as illustrated in Tables V and VI.

<sup>c</sup> Agreement between us and Thiessen and Stauff for this important [210] spacing was not good until their tabulated value of  $\sin^2\theta$  was found to be in error. Substitution of the Miller indices in Thiessen's own equation

$$\frac{1}{d^2} = 0.01545h^2 + 0.0117k^2 + 0.000375l^2$$

leads to a value  $3.69 \text{\AA}^{\circ}$ , in agreement with our  $3.65 \text{\AA}^{\circ}$ . Their value of  $\sin^2\theta$  leads to a spacing of  $3.54 \text{\AA}^{\circ}$ .

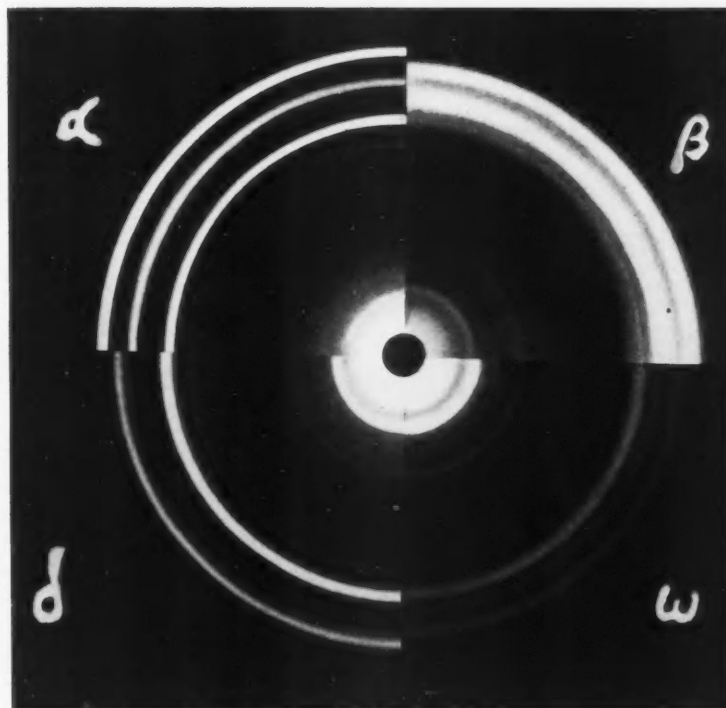


Figure 2—Quadrant comparison of the long spacing rings of the four crystalline phases of pure sodium stearate. (The ring closest to the center of the pattern)

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ner described in Table I. On the other hand, the long spacings are useful in such studies as possible fractionation during the cooling and crystallization of a molten mixed soap.

It will be evident that soap phases can be identified and their careers followed throughout a given processing history, without any space lattice calculations or any knowledge of the fundamental structures involved (3). To illustrate this principle, the ring diameters in the table of identifying values are given in centimeters as well as in Å., since by simple measurement of lines on the diffraction pattern the phase identification can be made, provided the reduction or enlargement of a given print is known.

Before proceeding to a more detailed description of the various solid phases, a specific example will be given to illustrate the significance of certain phase changes on soap technology. A commercial milled soap of approximately 80 per cent tallow-20 per cent coconut oil was passed through the milling and plodding operations, and then consisted of practically 100 per cent beta phase; it was converted to omega phase by heating in a sealed container to about 190 deg. F. and then allowing to cool quietly to room temperature. Another portion was converted to delta phase by reworking at a low temperature (50-60 deg. F.). The three samples, of identical chemical composition but of different phase, were then compared in properties; results are shown in Table III. It is evident that each different treatment provided a product of different phase composition and at the same time led to widely varying performance and properties.

The diffraction data were obtained using unfiltered copper K radiation from a standard General Electric diffraction unit. Hydrous soap samples were contained in thin, sealed Pyrex capillaries about 0.1 cm. inside diameter. The diffraction patterns were registered on flat film, 5 cm. from the sample or at 10 cm. for the long spacing patterns of Figure 2.

The single soaps studied were prepared by saponification of Eastman-grade fatty acids with carbonate-free sodium hydroxide, followed by oven drying at 150 deg. C. to constant weight. Purity of the fatty acids used is indicated by the following typical acid values:

ACID	EASTMAN CATALOG NO.	— ACID VALUE —	
		EXPTL.	THEORETICAL
Lauric	933	275	280.0
Myristic	1116	245.6	245.6
Palmitic	1213	215.5-218.4	218.8
Stearic	402	196.8-197.2	197.2

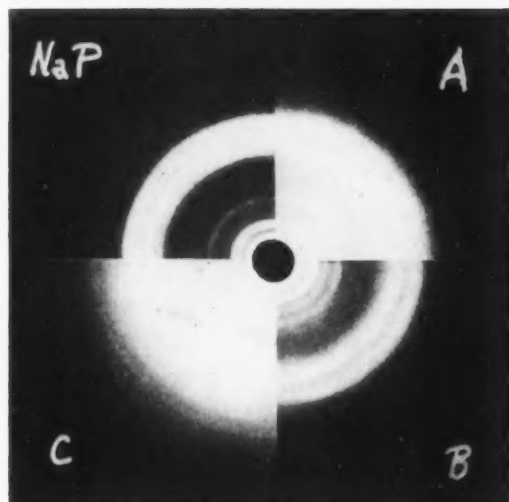


Figure 3—Quadrant comparison of identifying beta rings in hydrous sodium palmitate and in commercial soaps of varying composition and moisture contents (See data in Table V)

#### BETA PHASE

Beta phase has a direct and significant involvement in commercial soaps (i. e., soap-water systems) and is prominent in the phase behavior of pure single soaps also. For example, in low-moisture commercial soaps, simple cooling of neat soap may produce omega phase which, in many formulas, can be transformed into beta phase of more rapidly soluble form by agitation at temperature levels where beta is stable. In such systems the formation of beta is favored over omega by agitation in phase-composition areas and at temperatures where beta can exist.

Table III—Properties of Three Phases of a Typical Commercial Soap

	BETA	OMEGA	DELTA
Firmness, arbitrary units	8.0	7.2	3.0
% soap rubbed off bar in use in water <sup>a</sup>	2.4	0.5	1.7
Reaction to water when soaked	Swells and disintegrates	No Swelling or disintegration	Cracks, with little swelling

<sup>a</sup> This figure is a measure of the ease of lathering of the bar of soap; the pronounced difference between beta and omega is readily observed in ease of lather tests.

#### ACKNOWLEDGMENT

Acknowledgment is made to A. S. Richardson for his constant advice and assistance during the course of the work and in the preparation of this paper.

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The ability of beta crystals to exist in rapidly soluble, easy lathering form is an important and far-reaching characteristic utilized in the milling and plodding process and in the newer votating process of Mills (7). (The methods of determining phase composition described in the present paper were applied by Mills to the interpretation of a process for making a new form of commercial soap, employing a rapid cooling device known as a votator). It must be pointed out that those conditions under which beta is formed, which affect such factors as the size, orientation, coherence, etc., of the crystals, are important in influencing the properties of the final product.

In a soap composition which contains a large proportion of beta, the transformation of beta to omega may be followed easily by means of the x-ray when the soap is heated to a temperature (characteristic for the composition) at which beta is no longer able to exist. This soap, when cooled to room tem-

Oh! thus be it ever when freedom shall stand  
Between their loved home and war's desolation!  
Bless'd with victory and peace, may the Heaven-rescued land  
Praise the power that hath made and preserved us a nation!  
Then conquer we must, when our cause it is just,  
And this be our motto - "In God is our trust!"  
And the star-spangled Banner in triumph shall wave  
O'er the land of the free and the home of the brave!

LAST STANZA OF THE STAR SPANGLED BANNER  
FRANCIS SCOTT KEY

Richard M. Krause  
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perature, will be found to have lost its translucency (provided it was originally in the translucent condition), and to possess lathering properties of the lower degree consistent with omega phase. Its behavior in water is radically altered, as the comparative results in Table III show.

When heated further, the omega soap melts and the system finally becomes a homogeneous semiliquid neat soap which is liquid crystalline. In certain instances transformation to a waxy phase may occur, but the course of the melting, through single or multiphase fields, may be followed by obtaining diffraction patterns at the successive temperature levels. The point of complete melting to neat soap may be located more precisely by means of a dilatometer curve (6), but the specific identification of the phases present at any temperature is obtained from the x-ray pattern.

During any process in which omega is eliminated with the simultaneous production of beta, the gradual fading out of the characteristic omega ring, together with the gradual strengthening of the beta ring, not only gives a measure of the transformation but provides ample evidence of the reality of the phase change.

(Continued in the December issue)

### Soap for Textile Finishes

IN THE TEXTILE industry, one of the largest industrial users of soap, a major use is in cloth finishing, particularly waterproofing. The easy formation of water-repellent insoluble metallic soaps and the excellent emulsifying powers of soap are the properties usually utilized.

Fine particles of wax dispersed in soap water are often used to impregnate textiles and other fibrous materials without stiffening the fabric or imparting an unpleasant "feel". In this way, a water repellent effect, good for anything except excessive water pressure, can be applied to the cloth.

A combined wax-aluminum soap-aluminum salt dispersion is described in an American patent granted a short time ago (2,285,579). Wax is emulsified in an aqueous solution of soap and the sodium salt of a polymeric acid and a solution of aluminum formate then added. The aluminum compound forms an insoluble, water-repellent soap and a salt of the acid, both of which remain dispersed with the wax in the remaining soap solution. The dispersion is said to be stable above 80 C., that is, at the temperature of application to the textile.

Another combined dispersion proposed in a British patent (540,650)

## Soap in Lubricants Speeds Up War Production

THE USES of soap involve uses that the majority of people never consider as in any way connected with this broad industry. Used as a lubricant, soap is assisting in the production of shell and cartridge cases, barbed wire, cables, springs, and cold-drawn bars, wires and steel blanks of every kind.

In drilling, or turning on a lathe, or drawing of metal objects and in the drawing of wire a lubricant is necessary, and for this purpose soap is universally used, because it is clean, easy to handle, concentrated and more easily adaptable to a wide variety of conditions.

The use of soap touches so many different types of metal working that it is practically impossible to present accurate statistics covering the entire field. A partial estimate can be based upon the figures of the American Iron and Steel Institute—presented by the Ass'n of American Soap and Glycerine Producers, Inc.—which reports that during the calendar year 1942, the total pro-

duction of cold-drawn steel bars was 1,963,445 tons and of drawn wire, 3,679,646 tons. Since a ton of this type of production averages at least two pounds of soap, it is evident that more than 11,000,000 pounds of soap is now being used annually for this purpose.

According also to an article in the *American Machinist*, soap coating eliminates the need for copper plating in the manufacture of 37 mm. cartridge cases.

Soap is also a vital component of a large number of new greases with which technicians are meeting new production problems. It is also used in cutting oils. The addition of soap to airplane grease lubricants makes them more resistant to extreme cold and sudden changes in temperature.

These are only a few of soap's many uses.

Soap is also a vital component of a large number of new greases with which technicians are meeting new production problems.

presents an interesting modification. Ceresin (a wax), and cetyl alcohol are dispersed in a solution of montan soap and the mixture reacted chemically with an aluminum acetate solution. A portion of the soap forms the waterproofing aluminum montanate, which remains dispersed with the wax. A novel point is the addition of salts of the tetra-valent metals (zirconium, uranium, titanium) to the aluminum salt solution to minimize loss of water-repellency on dry cleaning.

### Soap Solution Properties

BY ADDING pine oil, the solubility of hydrocarbons such as benzene and paraffin oil in soap solutions can be considerably increased, in the opinion of Holmes (*Jour. Physical Chem.* 43, 495, 39). Paraffin oils do not form emulsions with soap solutions but instead form clear solutions. Upon reaching the limits of solubility further additions of paraffin oil result in emulsions and the mixture becomes turbid. These solubility limits can be increased, according to Holmes, when polar oils such as pine oil are added to the paraffin oil, this effect being particularly pronounced in concentrated solutions. For instance, a 20 per cent solution of sodium oleate will dissolve 1.6 times its weight of a mixture of equal parts of kerosene and

pine oil. A 33 per cent solution of sodium oleate dissolves 1.33 times its weight of a like mixture. The maximum solubility of a mixture of water, soap, benzene and pine oil was achieved in proportions of 1:8:8:2.

The influence of hydrogen-ion concentration upon the surface tension of soap solutions was examined by J. Powney and collaborators (*Trans. Faraday Soc.* 34, 356, 38) who use pure sodium and potassium soaps of oleic, myristic and lauric acids. Little difference was noticed between the surface activity of potassium and sodium soaps of the fatty acids mentioned. The alkali salts which increase the pH of soap solutions reduce the surface tension, whereas the salts which lower the pH increase the surface tension. The hydrogen-ion concentration required to reduce hydrolysis is increasingly less with the use of oleate, myristate and laurate, in that order. This occurrence is closely connected with the relative degree of hydrolysis of the soaps. It follows that the sensitivity of the surface tension to the addition of alkali changes with the natural hydrogen-ion concentration. The changes in the surface tension are connected with the pH as well as the concentration of the neutral salt. However, the effect of the salt predominates only if the hydrolysis is controlled.—*Schimmel Briefs.*

# **Schimmel**

## **masking agents for isopropyl alcohol**

*mask and mellow the basic disagreeable  
odor of this useful product.*

**These different masking agents tone in with and  
enhance the perfume used in the finished product.**

**MASKING AGENT 3046 . . . \$3.60 lb.**

Recommended for light floral bouquets such as clover, as well  
as for rubbing alcohol, etc.

**MASKING AGENT 3047 . . . \$4.00 lb.**

For use in connection with floral bouquets of medium heavy  
type and also with lily of the valley and similar odors.

**MASKING AGENT 3048 . . . \$5.50 lb.**

For use in connection with floral and fancy bouquets of all  
types, colognes, etc. This particular masking agent is found  
most satisfactory for all around use.

**MASKING AGENT 3150 . . . \$7.25 lb.**

For use in connection with lavender, chypre and fougère  
bouquets.

For any of the above, use  $\frac{1}{4}$  oz. per 1 gallon Isopropyl alcohol.  
Let the mixture stand for one week, after which it is ready for use.

**SCHIMMEL & CO., INC.**  
**601 West 26th Street, NEW YORK 1, N. Y.**



# Here and There Among Our Friends

► F. C. Theile, president of P. R. Dreyer Inc., New York, N. Y., has left the hospital after a nine-weeks' illness, and has returned to his home for recuperation. Mr. Fishbeck, of P. R. Dreyer, advises us that he is well on the way to recovery, and we join with his many friends in the essential oil field in wishing for his speedy recovery.

► J. B. Magnus, vice-president of Magnus, Mabee & Reynard, Inc., is on a six-weeks' trip to the West Coast for a series of sales meetings with the company's representatives, Braun, Knecht, Heimann Company, San Francisco; Braun Corp., Los Angeles, and Van Waters & Rogers, Inc., Seattle, Portland and Spokane. Rowland C. Ringgold, M M & R's assistant to the president, will join Mr. Magnus in conducting sales clinics.

► Louis A. Rosett, president of Florasynth Laboratories, Inc., has sold all of his stock in this company and its affiliates, Florasynth Laboratories de Mexico, S. A., Mexico City, to Dr. Alexander Katz and Mr. William Lakritz, and has retired from the business after serving as its president for almost 25 years. His agreement with the company includes a negative covenant precluding him from entering into a competitive business for a period of five years, but in no wise preventing him from engaging in any other type of chemical business. It specifically permits his association in any business manufacturing, selling or distributing any kinds of foods, beverages, perfumes, cosmetics, soaps or any articles in which aromatic chemicals, essential oils, colors or flavoring extracts are used as ingredients.

Mr. Rosett is one of the best-known men and one of the most colorful in the essential oil industry with which he has been connected since January, 1917, when he joined the concern which had been founded in 1916 by the late Charles L. Senoir and Dr. Alexander Katz. From a feeble beginning under these three men, the organization developed into a prosperous concern with branches in Chicago, Dallas, Denver, Los Angeles, New Orleans, San Francisco and Seattle, and with two affiliated

concerns, Florasynth de Mexico, Mexico City, and Florasynth Laboratories (Canada) Ltd., Montreal, Toronto, Vancouver and Winnipeg. In 1935, Mr. William Lakritz, who had been associated with Florasynth for many years, acquired a stock interest and became an officer of the corporation.

As the company developed, Mr. Rosett's circle of acquaintances widened and over the years he has made friends in practically every state of the union. For many years he has been chairman of the Scientific Research Committee of the Flavoring Extract Manufacturers' Ass'n where he rendered yeoman service. During his student years at Brooklyn Polytechnic Institute of Engineering where he was a member of the class of 1915, he was employed by the Public Service Electric Company of New Jersey in their construction and repair department for underground and overhead transmission. Subsequent to this and before joining Florasynth he was associated with Carey Printing Company where he acquired experience in fine color printing, and had contact with many phases of the advertising and publication field, and this early interest has remained a continuing hobby throughout the years. He is a member of the Chemists' Club and the Quaker Ridge Golf Club, and was a former member of the Research and Patents Committee of the National Ass'n of Manufacturers. He is very active in civic affairs in New Rochelle, N. Y., where he lives; has been a member of the board of the Community Chest in that city for many years and is a member of the Mayor's Defense Council there.

During the first World War Mr. Rosett served in the Chemical Warfare Service, Gas Defense Division. His son, Captain Louis Kenneth Rosett, who was graduated from Massachusetts Institute of Technology in 1942, is following in his father's footsteps, for he is engaged in the Chemical Warfare Service as Wing Chemical Officer with the Army Air Force in England. His younger son, Edward, is in a construction battalion of the Signal Corps, stationed in Georgia. A daughter, Mrs. Herbert S. Hollender, is living in Greenville, S. C., where her husband is serving as Base Engineering Officer at the Greenville Army Air Base.

As yet, Mr. Rosett has not announced his plans for the future, but he is hoping to enjoy a well-earned vacation before embarking on any new business venture.

► William H. Adkins, essential oil and aromatic chemical broker, New York, N. Y., accompanied by Mrs. Adkins, has returned from a well-earned vacation trip to the places of interest in Virginia.

► Percy C. C. Isherwood, Ph.D., O.B.C., chairman of the W. J. Bush & Co., Ltd., London, England, and president of W. J. Bush & Co., New York, N. Y., and other of the Bush subsidiary companies, was elected October 14, chairman of Association of British Chemical Manufacturers.



Dr. P.C.C. Isherwood

Dr. Isherwood's outstanding position in the field of chemistry enabled him to be of conspicuous service to the British Government during the first World War for which he received the coveted Order of the British Empire. He is recognized as one of the principal contributors to the development of the fine and synthetic chemical industry in Great Britain. It is hardly necessary to point out that the major part of the work of his company in England today is concerned with the war effort. His friends on both sides of the Atlantic will regard with satisfaction the further tribute accorded to him in his election as chairman of Britain's outstanding chemical association.

► Jesse H. Jones, Secretary of Commerce, was introduced by Percy C. Magnus, chairman of the board of the New York Board of Trade, as the principal speaker at the Board's recent 70th Anniversary Dinner held at the Waldorf-Astoria, New York. About 1500 guests were present at the occasion, among them many notables from our Good Neighbor countries as well as prominent American business men.



Messrs. Magnus and Jones at the dinner.

# Remember Me?



I'M THE GUY who looked at you from a USO poster a little over a year ago.

I'm the guy you forked over \$34,000,000 for—so that, through the USO, you could let me and all my buddies know that someone home still thought about us—still cared enough not to want us to miss out on any of the things we were in uniform fighting for.

A hot cup of coffee, for example, when you come in all grimy and tuckered out from a little "business" trip...

A club house with easy chairs to melt into and desks to sit at and

write home and a dance floor and some decent girls to give us out here a little reminder of what it's still like back there.

You remember, don't you?

You probably dug deep for a lot of other things that year, too...for British War Relief, United China Relief, and so on. Well, this year it's going to be simpler for you. Because this year, seventeen war relief agencies have banded together into one great big campaign—the National War Fund. This time you are only asked to give *once* for *all* seventeen.

And take it from me, as one who ought to know, *that contribution you're*

*going to make is one of the greatest things you can do to bring about victory.* Not just because part of it's going to the USO to do wonders for the morale of the fellows under arms, but because a good deal of it is going to help relieve distress at home through local agencies—as well as abroad, to help keep our allies in the fight.

So when you're asked to give to the united campaign of the National War Fund and our community's own war fund this month, remember me. Every dollar you give helps me out in countless ways, and does its bit to bring me home sooner.

Give in a big way, will ya?

**Give ONCE  
for ALL these**

USO  
United Seamen's Service  
War Prisoners Aid  
Belgian War Relief Society  
British War Relief Society  
French Relief Fund  
Friends of Luxembourg  
Greek War Relief Association  
Norwegian Relief  
Polish War Relief  
Queen Wilhelmina Fund  
Russian War Relief  
United China Relief  
United Czechoslovak Relief  
United Yugoslav Relief Fund  
Refugee Relief Trustees  
United States Committee for the  
Care of European Children

## NATIONAL WAR FUND



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ROURE-DUPONT, INC., NEW YORK, N. Y.**

# New Products, Ideas and Processes

## Waterbury drawn paper caps

Several years ago the Waterbury Paper Box Co., Waterbury, Conn., developed machinery for making face powder boxes, drums and covers in one piece. With the shortage of materials and the need for a strong substantial threaded cap, Waterbury converted these machines so that the cap can be embossed or debossed and threaded in the drawing process. To make the cap strong the paper board is first impregnated before being processed. These caps meet all the specifications of the Glass Container Ass'n. A means has also been developed for lacquering the outside to make them as beautiful as the now impossible-to-get metal caps. Sizes are 89, 63, 58 and 41 mm.

## Skin-protecting creams

Two new skin-protecting creams have been developed by the Cadet Creme Co.; the one, recommended for protection against skin absorption of paints, lacquers, tars, resins, glues, graphite and other materials. The second is insoluble in cutting oils and soluble oil emulsions. The company says that it affords protection against strong or dilute acids and alkalis, metallic salts, dyes and coal tar distillates.

## Synthetic insecticidal material

A new insecticidal raw material, the active ingredient in the Army's new louse powder formula, is the subject of U. S. Patent, 2,329,074, issued to Geigy Company, New York, N. Y. The toxic ingredient in this product, sold abroad under the names of "Gesamol" and "Neocid," is dichloro-diphenyltrichloroethane.

## Sterilizing agent

A new sterilizing agent containing as an essential ingredient normal-benzylmaleimide inhibits the growth of fungi or bacteria. The butyl compound may also be used. This is the subject of Canadian Patent 414,219 of L. H. Flett, and assigned to Allied Chemical & Dye Corp., New York, N. Y.

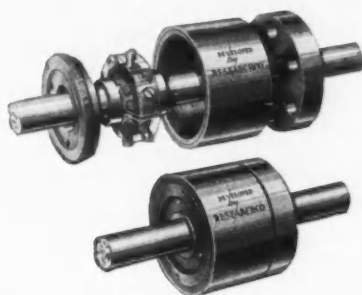
## Treatment of chloracne

The treatment of chloracne through the application of a skin cleanser consisting of 98 parts of sulfonated castor oil and two parts of a wetting agent such as Duponol W.A., was recommended recently in "Public Health Reports" by Dr. Louis Schwartz, medical

director of the U. S. Public Health Service, and Frank A. Barlow, medical director of the Wright Aeronautical Corp., Paterson, N. J. It was declared that the mixture should be applied once or twice a week to prevent chloracne to those parts of the body liable to infection during the use of chlorinated compounds encountered in industrial operations.

## Lubricated centrifugal clutch

A new type of automatically engaging and self-disengaging centrifugal clutch, known as the "Torkontrol" and produced in an unlimited range of sizes



"Torkontrol", new automatically engaging and self-disengaging centrifugal clutch

and capacities has been announced by the Amalgamated Engineering & Research Corp., 100 W. Monroe St., Chicago, Ill. This clutch can serve either as a coupling between shafts or as a driving pulley or gear in a transmission, as well as a starting cushion between power units and driven mechanisms.

A full description of this clutch may be obtained from the manufacturer.

## Removing odors from fish oils

Objectionable odors can be removed from fish oils by catalytic hydrogenation under controlled temperature and pressure in the presence of activated carbon, according to a newly developed process—U. S. Patent 2,321,913 issued to D. J. Hennessy, Teaneck, N. J., and assigned to Vitamail Labs., Inc.

## Citric acid substitute

A mixture of phosphoric acid and lactic acid is being offered as a substitute for citric acid under the name of "Roco Citric Substitute." This is a product of Robert & Co. The company states that the substitute will satisfy the Food and Drug Administration, and is packed in cartons containing four bottles of ten pounds each.

## Feather mascara brushes

Due to the scarcity of conventional mascara brushes J. Leshin, 564 Eighth Ave., New York, N. Y., is offering feather mascara brushes for immediate delivery.

The brushes are waterproof, undyed and have a unique feature in that one side may be used for applying the mascara and the other side may be used to comb out the eyebrows and lashes afterwards. A patent for the new brushes has been applied for. Samples will be sent to any one interested.

## Vegetable oil from fanweed

A new source of vegetable oil has been reported by two Pennsylvania State College, Philadelphia, Pa., chemists who found the critical material in the common fanweed.

Professors H. O. Thiebold and J. R. Clopton, biological chemists, said the weed is about one-third oil of a quality that may prove of great economic value in replacing imports shut off by war.

They said fanweed oil may be an acceptable substitute for rapeseed oil, more than 10,000,000 pounds of which were imported from Japan in 1940.

"Fanweed oil and rapeseed oil are similar in the high content of euric acid which their glycerides contain and in changes of viscosity at ordinary temperatures," explained Professor Thiebold. "Both provide a stickiness and elasticity when added to mineral oils, which improve the protective coating."

The chemists pointed to the ease in growing fanweed in the western corn-belt and high plain states and said a yield of "500 to 1000 pounds of oil per acre might reasonably be expected."

# Announcements

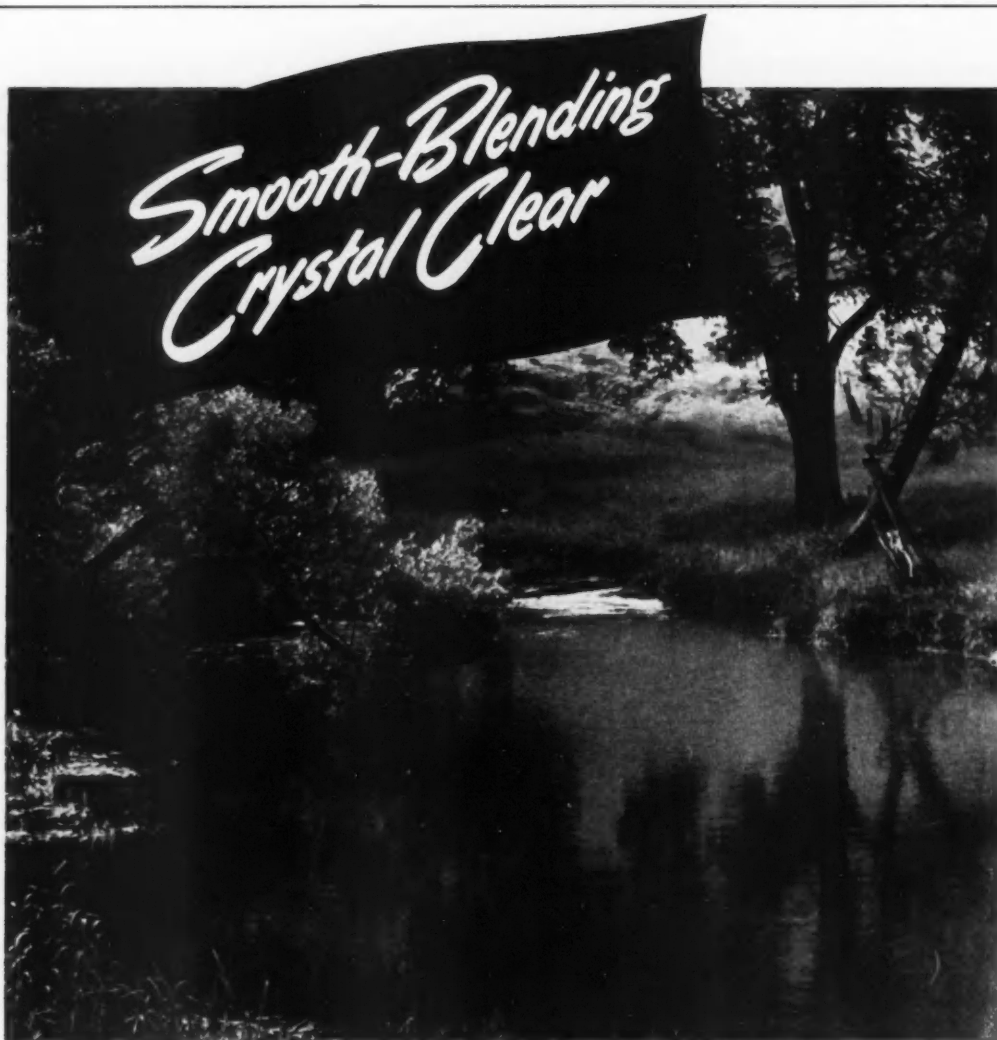
## Ungerer & Co., Inc.

Ungerer & Co., Inc., 161 Sixth Ave., New York 13, N. Y., has just issued its price list. This most attractive booklet contains a foreword occasioned by the 50th anniversary of the company, which outlines the policy of the company, "a policy of service and friendship which it has maintained throughout its fifty years of existence."

Following the listing of essential oils, aromatic chemicals, flavors, etc., there is a listing of war-time substitutes of more than 30 products.

## Phoenix Flame

Phoenix Metal Cap Co., 2444 West 16th St., Chicago 8, Ill., in its November Columbus issue of the *Phoenix Flame*, features some very lovely reproductions of Early American scenes, together with packages of their customers.



## **Penn-Drake White Oils**

**make your good cosmetics better!**

Crystal clear . . . unmatched brilliance . . . and all the qualities that assure finer, smoother preparations stem from Penn-Drake's seventy years refining experience. And these better qualities do not deteriorate on dealer's shelves!

*Write Dept. 101 for valuable information on Penn-Drake White Oils or other products*





# Our Washington Correspondent Reports to You

by ARNOLD KRUCKMAN

**P**EPPERMINT is the reason for one of the major phases of the Battle of the Potomac now going on. The outcome will determine how tough you may expect the War Food Administration to be in various situations affecting the materials you use; and who is the boss over essential oils; and whether the peppermint group has prevailing influence; and a number of other answers. The question of big business and small business also enters the conflict, and at this writing it seems as though the Murray Small Business Committee of the Senate may mix into it with a public enquiry, prompted by some consumers' organizations dominated by housewives who in turn have been stirred up by the thousand or so small manufacturers who use from two to 20 pounds of peppermint oil each in making things dear to the heart of the school child and the average household. National farm organizations are vigilantly watching over the peppermint farmers' equities in the business. This incident appears to be a crisis, a showdown, and might terminate far away from the end those who have forced the issue may desire. It is important to your industry because either directly or indirectly it will establish precedents that affect you.

## PEPPERMINT ORDER DISCUSSION

As you know, in September War Food Administration, Distribution Division, issued a limitation order freezing peppermint oil wherever it might be and whoever might have it, except that those who used it in their production processes might utilize 30 per cent of the quantity used during the corresponding period in 1941, pending determination of the stocks on hand everywhere in the United States. This order was brought on by the loud wails, from every one who uses peppermint oil, over the impending shortage; the original turmoil chiefly sprang from the demands of the British for 250,000 pounds which brought protests because American industry also needed a new supply, presumably 1,000,000 pounds to make menthol.

On October 15, the Oil of Peppermint Industry Advisory Committee met here under the chairmanship of A. L. Kalish, chief of the Essential Oils and

Flavors Section of the Special Commodities Branch of the Food Distribution Administration. Mr. Kalish is primarily a business man, familiar with the food industry, with special training in procurement, and with school background in chemistry and engineering. He is a realist who has tried to find how you can make the 500,000 pounds of this year's product fill the aggregate demand for 800,000 pounds. The make-up of the Committee is important news because it will enable you to determine the interests involved. Those attending the meeting were: George Keough, New England Confectionery Company; R. R. Holcomb, Wm. Wrigley, Jr., Company; A. J. Todd, A. M. Todd Company; G. W. Sharpe, Beech Nut Packing Co.; George W. Posthill, Life Savers Corp.; R. D. Linthicum, Brown & Williamson Tobacco Co.; R. K. Hines, Vick Chemical Company; E. F. Berg, E. R. Squibb & Son; Henry F. Woulfe, Pepsodent Company; J. H. Blakney, Colgate-Palmolive-Peet Company; and F. T. Dodge, Dodge and Olcott Company. Also present were Special Commodities Branch Chief H. C. Albin of War Foods Administration; WPB Drug and Cosmetics Section, Chemical Division, Assistant Chief, C. A. Willard; and OPA Drug and Cosmetics Section Chief Robert Dupree and other government personnel.

The desire of the business group was that the whole problem of distribution be left entirely to the industry itself for adjustment without government interposition. With the apparent blessings of WPB, these sentiments seem to rest upon the assumption that the industry has always been able to wash its own linen without outside help, and that it has always been able to parcel out peppermint oil to all who need it whether the price is \$25 a pound or \$2.50 a pound. It is reported that four major parts of the dominating group, which have approximately 1,250,000 pounds of oil on inventory, and probably even larger quantities in compound form not immediately identifiable on inventory. The general conclusion, of the pros or the cons is that these groups have at least two years' reserve. For this reason it has been determined that 800,000 pounds are actually needed to be supplied out of the 500,000 pounds

located by War Food Administration.

However, if the allocation order is issued the eventual determination rests with Roy Hendrickson, War Food Distribution Administrator, and with the WFA Review Board; also with WPB, which must approve its phase of the order. Mr. Hendrickson, who hails from Minnesota, and has been identified with the National Millers' periodical, as well as with the Associated Press and the national broadcasting chains, is reported to have declared himself against an allocation order. This statement has not been verified. It also has been reported a compromise has been suggested on the basis of a limitation for three months. On the other hand the opponents of limitation or allocation urge that peppermint oil is non-essential and should not come under strict government control; and the proponents of control come right back and suggest that with a low price ceiling, lack of control will be an invitation to establish a flourishing black market.

## WHO CONTROLS ESSENTIAL OILS?

WFA and WPB hitherto have carefully shied away from a show-down on who has ultimate control over essential oils. Theoretically, WFA holds that any product from things that grow comes under its jurisdiction. On the other hand, WPB Chemical Division, one of the tightest and most comprehensive and autocratically controlling units in the War Government, claims jurisdiction over all chemical products of agriculture. For instance, both WPB and WFA seem to agree that after WFA has allocated whatever proportion of peppermint oil may be used for menthol, the actual distribution of the aggregate allocation among the various manufacturing firms should be made through the WPB Chemical Division. This would seem to point to the probability that WFA will determine how much over-all your industry may obtain of any essential oil, but that WPB will tell each particular firm or person what fraction they have of the over-all allocation. The chewing gum group seems to have adroitly used this peppermint situation to force WFA to declare itself on the principle of allocation controls over admittedly non-essen-

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tial materials; which in turn places WFA in the position where it must define its authority over a no-man's land between its boundaries and the boundaries of WPB.

#### MANPOWER—CONTAINER PROBLEMS

Manpower and containers appear to be the chief troubles of the industry at this time. Order L-232 issued late in October forbids the use of wooden containers for shipping cosmetics, toiletries and allied products. Order L-317 limits use of fiber containers to 65 per cent of the corresponding period in 1942 for cosmetics, and to 80 per cent for dentifrices. Fiber shipping containers are restricted on either a tonnage or footage basis whichever is the smaller. The limitation applies to corrugated containers .060 or heavier. Kraft paper is rapidly becoming very scarce and those who use it will be compelled to seek other materials.

#### OPALWARE GLASS SUPPLY MAY EASE

There seems some prospect, and it is only a prospect, that opalware glass used as containers for cosmetics and toiletries may be easier, and that more containers of this material may be available.

#### FATS AND OILS FOR SOAP EASED

WFA also has relaxed the restrictions on the use of fats and oils in soaps. Instead of 80 per cent of the 1940-41 base period, manufacturers may now use 90 per cent. Soap manufacturers who use more than 50 pounds of diphenylamine per month now must apply for an allocation of the material by the tenth of the previous month on WPB form 2947.

#### SIMILARITY OF CONTAINERS

The most universal complaint received here about the new paper containers used by your industry is over the almost identical similarity of the forms. Apparently many producers of powders, whether tooth or body or face powders, and similar products, used the same kind of tubular pasteboard box, with a sliding flat circular top which in theory opens an aperture to permit use of the powder. Even the printed surfaces of the boxes are so similar that many persons complain they often mistakenly use a tooth powder for a body powder, and vice-versa. The ready adoption of the standardization might not be complete wisdom. It not only is unpopular with the consumer, but it might provide regulators after the war with arguments to impose standardization and concentration. Retailers complain about the absence of salesmen, and about poor service through jobbers.

#### METAL OUTLOOK HOPEFUL

Some metal has been provided to manufacture containers for shoe polish. This is regarded as an indication that metal also may be made available for cosmetics and toiletries, and that there may be more metal for closures. On the whole your friends in WPB feel that the closure problem is no longer pressing. Obviously normal supplies are not available, nor will normal supplies be in sight for a long, long time; but with various sources of metal becoming easier, and with substitutes apparently more useful, the industry apparently may be served with paper, glass, ceramic and formaldehyde plastic closures, in addition to metal closures. WPB Nelson has asked that your industry as well as all others take a hand in urging customers to save metals in any form whatsoever.

#### ROSIN ORDERED AS SOAP EXTENDERS

WFA and OPA have announced rosin or rosin builders must be used with fats and oils in making toilet bars, fine fabric soaps, floating soaps, and white laundry soaps. Under the order issued the latter part of October to stretch soap production all toilet soaps, etc., must contain at least two per cent of rosin. This action is designed to increase the national supply by nine per cent.

#### MANUFACTURES TAX ON COSMETICS

The House Ways and Means Committee approved on October 25, a 10 per cent manufacturers' excise tax on tooth pastes, dentifrices, mouth washes and soaps, as part of a surprise program to secure revenue to replace the Treasury plan for increased individual and corporation taxes which the tax committee had scrapped. It is estimated that this tax will yield \$51,000,000 in revenue. There seems to be no opposition to the Treasury's proposed increase from 10 to 25 per cent in the retail excise tax on all other cosmetics which also has been approved by the Ways and Means Committee.

The gross increased revenue yield annually is estimated at \$54,800,000. Excise Taxes on cosmetics and toiletries in September are reported by Internal Revenue as \$2,411,362.61. If the new schedule is adopted, as seems certain, the monthly total on the September basis of sales would be approximately \$7,500,000.

#### DENTAL LABORATORY RESEARCH

Initial effects of the chemical solutions and bacterial actions of many foods and materials on teeth have been studied by Drs. Wilmer Souder and Ira C. Schoonover of the Dental

Laboratory of the National Bureau of Standards with the result that they have assembled a wealth of data that should be invaluable to dentifrice manufacturers. The data will be published in the November issue of the Bureau's Journal of Research, also in the Journal of the American Dental Association. Carl Steidle, well-known retail druggist of Cincinnati, has been appointed to serve on the OPA Industry Advisory Committee on the Distribution of Cosmetics, Drugs, and Health Supplies. Walter F. Straub, well-known pharmaceutical manufacturer of Chicago, has been appointed director of OPA's Food Rationing Division. Col. Bryan Houston, descendant of the celebrated Texas pioneer, has been appointed Deputy OPA Administrator of Rationing. Charles C. Concannon, chief, Chemical Unit, Bureau of Foreign and Domestic Commerce, has been loaned to the Chilean Government for a year or more.

National Bureau of Standards has announced its formulas for simplification of paper boxes for toiletries and cosmetics, establishing maximum thickness of paperboard, restricting sizes to size of contents, and limiting protective covers. Frills are eliminated. Estimated the standards will save 5000 tons paperboard yearly. Send a nickel for a copy of Simplified Practice Recommendation R200-43 to Superintendent of Documents, Washington 25, D. C. Surveying 60 establishments, Labor Department found manufacturers of toiletries and drugs had an injury frequency rate of 20 for one month among their employees. The average for all industries surveyed, 38, was 14 disabled, with 0.3 per cent dead, and 3.4 per cent permanently disabled.

#### ALCOHOL STILL TIGHT

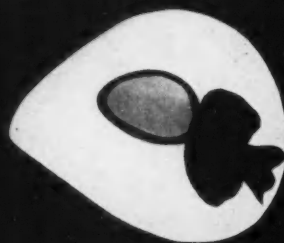
The supply of alcohol remains static. Those who have genuine need for relief will not find the Alcohol Administration in the WPB Chemicals Division unsympathetic. Industrial alcohol this year totals 450,000,000 gallons. In 1944 it is estimated at 590,000,000 gallons. But synthetic rubber will use half of next year's production. New plants now under construction are expected to supply 60,000,000 gallons more alcohol next year. Glycerine continues free at 90 per cent of the 1940 base. WFA Order No. 34 was amended late in October chiefly to permit those who buy glycerine by tank car to accept up to five per cent in excess of quantity allocated if necessary to complete a practical shipping unit. It also provides monthly applications for allocations must be made on WFA forms 477 and 478 instead of WPB form PD-600.

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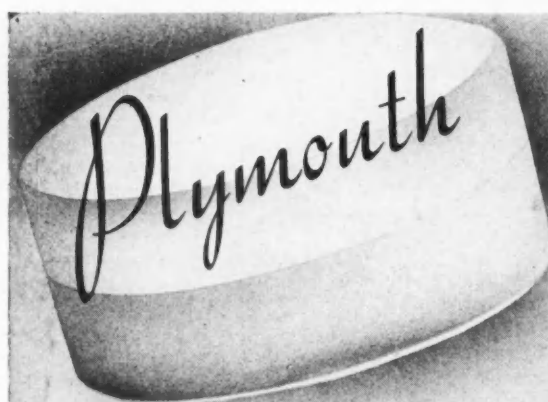
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## POWDER BASE NO. 7

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Its exceptional silky, soft, smoothness, the complete absence of odor and the extremely fine particle size of it, plus its extraordinary adhesiveness actually improves a face powder in which it is used. As little as 5% added to your formula will bring about this result although it is being used in some face powder to the extent of 15% and a formula is offered showing its use in this percentage.

Samples are at your disposal and we believe that this is one of the Plymouth products which warrants a serious investigation by every face powder manufacturer because it has real merit and will improve your product.

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# War Check List for Oct.—Government Regulations

*Digest of Federal rules and regulations on price control, allocations and other regulatory measures of cosmetic, soap and flavoring industries issued or proposed during the past month*

## **Restrictions on inventories of fatty acids (FDO-87)**

Under FDO-87 issued by the War Food Administration, covering fatty acids, no user may accept delivery of any fatty acids if such acceptance increases his inventory to one-third of the total amount used by him in the base period—Jan. 1 to June 30, 1943—other than fatty acids produced by such user. Special provisions are made for small users. This order became effective Nov. 1.

Any user requiring more than 50 pounds of fatty acids in any calendar month cannot accept delivery until he has filled out a form certifying that he is not violating the requirements or any amendments to this order.

Any person who considers himself too adversely affected by this order may make an appeal to the Director of Food Distribution, War Food Administration.

## **Conservation Order M-81 covering tin cans amended**

Under an amendment to Conservation Order M-81 cans made of tinplate, terneplate or blackplate, fiber or paper-bodied cans with ends made of waste material or of sheets recovered from used cans may be used for packing dental plastics, dentifrice powder, etc.

## **FDO-86 dealing with stretching fats and with inventories issued**

The Food Distribution Administration together with Office of Price Administration has issued FDO-86 requiring fats used in making household soaps be stretched by adding rosin and builders. This will account for the nine per cent of the 28 per cent increase in total civilian supply of soap announced by FDA on September 22; the additional 19 per cent to come from increased fats quota under Amended FDO-42. Designated percentages for

the different classes of soap are included in the order.

The order also prohibits any person who uses soap in his business operations from accepting after November 1, 1943, such amounts as will increase his inventory beyond a 45 days' supply at his current rate of consumption, or two bulk packages or cases of soaps, whichever is greater.

## **Glycerine Allocation Order FDO-34 amended**

By Amendment I, effective October 20, several minor changes were made effecting FDO-34 which do not concern in general the use in the cosmetic industry.

## **Order L-197 amended to include M-255**

Order L-197, covering steel shipping drums, has been amended to include the provisions of Order M-255, which controlled the allocation of new steel drums. M-255 has been revoked.

## **Industry users of sugar get holiday bonus**

The Office of Price Administration has granted industrial users of sugar a special holiday season bonus which amounts to 10 per cent of their 1941 sugar base for the November-December period. This gives users for the two-months' period an allotment of 90 per cent of the amount used in the base period.

## **FDO-46 dealing with coconut oil revoked**

The FDO-46 which froze 25 per cent of the imports of coconut and other lauric acid oils has been revoked; the order took effect October 27, 1943.

Actually, with the release some months ago of frozen inventories of these oils, and with government control of imports, the order has been ineffective for some time.

## **Use of oils and fats in soap increased by FDO-42**

FDO-42 has been amended to increase the use of fats and oils from 80 to 90 per cent of base period (1940-1941) in the manufacture of package and bar soaps; from 80 to 110 per cent for bulk packaged soaps and from 80 per cent to 150 per cent for abrasive hand soaps. This order became effective October 14.

The small-use exemption has been increased from 6000 to 10,000 pounds per quarter.

## **MPR-476—luggage regulation as it applies to the industry**

The Office of Price Administration in issuing MPR-476 covering the pricing of luggage, also included a provision whereby a tag stating material and price must be attached to each article of luggage and may not be detached except by the ultimate consumer. This tag does not represent the correct ceiling price on fitted cosmetic cases and other cosmetic items of luggage. This also means that tags may not be removed in the case of gift merchandise.

## **Minerals of interest to our industry exempted from M-161**

Certain minerals of interest to the cosmetic industry, exempted in General Inventory Order M-161 amended, are: bentonite, kaolin, pyrophyllite, soapstone, salt, borax—hydrated and dehydrated—and boric acid.

## **Price changes effective due to FDO-86**

Amendment No. 2 to Office of Price Administration's Commodity Practices Regulation No. 1 permits formulas for bar and package soaps to be changed to comply with FDO-86, and allows maximum prices therefore to remain unchanged provided the weight of the

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**FINEST**



POWCO BRAND Pulverized Neutral Soap, made from only the finest raw materials, laboratory controlled for uniformity of chemical and physical characteristics, and POWCO BRAND's wide experience in catering to the needs of dentifrice and cosmetic manufacturers are but two of the reasons why POWCO BRAND Pulverized Neutral Soap has helped to improve a long list of products.

Modern production methods and close selling margin make it possible for you to buy standardized air-floated POWCO BRAND Pulverized Neutral Soap to suit your needs—of better quality—at a saving.

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*The American Perfumer*

total anhydrous soap content of the product is not reduced more than one per cent for bars and three per cent for package soaps. A description of the necessary price changes to comply with this order must be affixed to the shipment.

#### **Restriction on soap-making and container machinery removed**

Restrictions on the manufacture of soap-making and machinery or equipment for the fabrication of containers have been removed by Amendment 2 to the Iron and Steel Conservation Order M-126, effective Oct. 7. Where priority ratings are needed to purchase these items, it is best to ask your supplier what rating he requires and then apply for it on WPB Form PD-1A.

#### **Amendment to M-336 places stricter allocation on glycol ethers**

Glycol ethers to be used in cosmetic products have been placed under stricter allocation under an amendment to M-336. To receive delivery of any glycol ether at the present time specific authorization must be received from the WPB. Those using from 400 to 460 pounds per year or less—with few exceptions depending on the type of the glycol—do not need to secure the written authorization.

#### **Restrictions on castor oil removed—FWA Order 32**

An amendment to Order 32 of the War Food Administration has removed all restrictions on the civilian use of castor oil up to January 1, but additional reports as to use and requirements are required.

#### **Soaps and scouring powders, exempt from WPB's Order L-317**

Soaps and scouring powders are not included in the list of 36 products which are subject to the quotas on corrugated and fiber (.060 or heavier) shipping containers under WPB order L-317, issued October 11.

The new inventory restrictions, however, do apply to containers for soap and scouring powder. Companies will have to limit their inventories of unfilled new corrugated and solid fiber shipping containers, sheets or rolls for wrapping or internal fittings to a 30-days' supply.

#### **Possible availability of solvents for nail polish**

In response to a request of the Toilet Goods Association for allocation of a small quantity of ethyl acetate and butyl acetate necessary for the continued manufacture of nail polish, the

following is the substance of the reply from the Chemicals Branch of the WPB.

It is impossible for the Branch to assign a definite amount of either ethyl or butyl acetate for the manufacture of finger nail polish at present. These acetates are quite short and are urgently needed in the war effort; however, the situation insofar as ethyl acetate is concerned has become slightly easier and it is possible that some may be released for this end use before long. Those interested should file and continue to file WPB 2945 forms requesting an allocation so that they will receive it the moment it becomes available.

#### **FDO-60 places fish oils under quota control**

Through an amendment to FDO-60 the Food Distribution Administration prohibits manufacturers from using fish oils without first applying for authorization for such use on form FDA-478.

Any manufacturer, however, is exempted from this control in any quota period of the use of fish oil—except Alaska herring oil and Alaska seal oil—in the manufacture of water soluble soaps up to 60 per cent of the base period use, which period is the corresponding calendar quarter of 1942.

#### **M-161 places borax and boric acid again under control**

Borax and boric acid which had been removed from inventory restrictions of Priorities Regulation No. 1, General Inventory order M-161, have been restored to such control under an amendment to M-161.

#### **WPB bans wooden shipping containers for cosmetics**

The War Production Board has amended its Order L-232 dealing with wooden shipping containers. The order prohibits their use for the following products of interest to the cosmetic industry: advertising displays, magazines, combs, cosmetics, dentifrices, depilatories, hair treatments, perfumes and toiletries, cleaning compounds and detergents and soap when packaged in glass, textile, metal or paper.

#### **FDO-78 relating to peanuts and peanut butter suspended**

The War Food Administration has suspended indefinitely the provisions of FDO-78 relating to the allocation and use of peanuts and peanut butter.

This action was taken to help industrial users of peanuts to utilize to the maximum the 700,000 tons of peanuts allocated for edible purposes.

#### **Shipping container order L-317 clarified by WPB officials**

Officials of the Container Division of WPB have clarified the shipping container order L-317 in their explanation that the user must compute his footage and his tonnage quota and abide by the smaller amount. The double quota basis was used to prevent a shift from jute to kraft boxes, the latter being much lighter and, therefore, more to the pound. There had been some confusion pertaining to the order as a number of users had the impression they could compute their shipping container quotas by estimating footage quotas and tonnage quotas and use whichever was the larger.

It can be seen, however, that this order prevents a manufacturer from conserving paper by going over to a lighter-weight paper as he would thereby not be able to secure more boxes as the footage basis would then apply to his allotment. If the footage basis could be done away with it is estimated that cosmetic manufacturers would be able to ship more than 80 per cent of their goods in 65 per cent of their base period boxes. It is expected that this will be taken care of very shortly.

#### **L-103-b may be amended to ease restrictions on industry**

Although L-103-b has been extended to the first of the year, the general consensus is that a restriction will remain for the duration but not on a 65 per cent basis. The cosmetic industry's chief objection to the order is that it does not affect all classes of the industry in the same manner. Companies that can increase the size of their containers without jeopardizing volume sales can keep up their production 100 per cent of normal. Smaller companies dealing in only one item and having no back inventories upon which to draw must withstand a flat 65 per cent cut in their businesses. Others dealing in complete lines have the opportunity to concentrate their efforts on their most popular items, suspend production on slower selling products, and thereby maintain normal production or in some cases, increase it to a marked extent.

Problems laid upon the industry by L-103-b were presented recently so forcefully and effectively at a meeting of the WPB Cosmetic Industry Advisory Committee that members of the industry now feel certain that WPB will amend the order to the extent that it will ease the burdens of the quotas on those hardest hit and will provide a method for handling individual appeals.

## Trade Jottings for Month of Oct.

HARRIET HUBBARD AYER, through its president, Mrs. Lillian S. Dodge, announces that George W. Hallett is no longer connected with the company.

BEAUTY COUNSELORS has had sent out by all of its counselors to their customers a most attractive self-selling gift folder. The folder does not represent by any means the complete line of gift packages that Beauty Counselors developed for Christmas this year, but due to the tightness of packages and also products, these represent those still available.

BRISTOL-MYERS CO., New York, N. Y., has signed a thirteen-week renewal contract to begin its third year as sponsor of "The Parker Family," a serial broadcast over the Blue Network.

COLGATE-PALMOLIVE-PEET CO. sponsored a War Bond rally in Jersey City, N. J., recently at which E. H. Little, president of the company, announced that over three thousand employees present had purchased a total of \$2,750,000 worth of War Bonds. The rally featured Barry Wood, well-known singer, as well as comedians Senator Ford, Joe Laurie, Jr., and Harry Hershfield. of "Can You Top This?"

MARY DUNHILL, INC., has recently published the first of its Beauty Booklet, entitled "Beauty is Yours." This booklet which will be published quarterly aims to "keep you abreast of the newest solutions to beauty problems, . . . from food to figure control, from fine skin to beautiful feet."

ANN HAVILAND announces that Mildred Barnett Hiehle has been appointed sales promotional director for the company. Mrs. Hiehle was formerly toilet goods buyer for Raleigh Haberdasher, Washington, D. C., and has more recently been connected with the Waldorf-Astoria Pharmacy in New York City.

RICHARD HUDNUT announces that William J. McCafferty has joined the sales force of the company and will cover Northern New Jersey, replacing P.F.C. Fred Lerner, who has joined the United States Army. Mr. McCafferty formerly was with Colgate-Palmolive-Peet.

The company also announces that Miss Christine Chiossi, national supervisor, has just returned from Canada where she conducted classes on skin care, make-up and a general physical

fitness program for Hudnut representatives as well as cosmetic salesgirls.

Also Polish-born Sonja Beaumont, of the New York office, and former local supervisor, has just received her commission as third officer in the WAC.

HOUSE OF HOLLYWOOD, Los Angeles, Calif., announces that Sally Hansen, its president and president last year of the California Cosmetic Association, is expected back in Los Angeles about the middle of November. Mrs. Hansen has been in New York for several months past where she has been in charge of her firm's branch house, opened not long ago, and which she reports is doing extremely well.

MAILLIARD AND SCHMIEDELL, Los Angeles, Calif., is introducing "42 Oil Shampoo" to the northern California drug trade by means of radio advertising.

MILKMAID, INC., wishes to make clear that the assumption of some people that all of the company's preparations contain pure, fresh dairy milk or cream is not the case. While there are 15 Milkmaid preparations that do contain fresh dairy milk or cream there are 11 which contain none.

The name rather implies that all of the preparations do contain fresh milk



E. L. MABRY (right), president of Prince Matchabelli, Inc., learns about the fine points of the rare "Earl" Stradivari from Paul Lavallo, conductor of "The Stradivari Orchestra", the radio program sponsored on an NBC network by Prince Matchabelli, Inc. The "Earl" is featured in solo on each Sunday afternoon broadcast at 12:30 p.m.

or cream, and as Milkmaid, Inc., does not wish to sail under false colors nor to create any misconception regarding its merchandise, this announcement is made to emphasize the exact nature of the products.

PRIMROSE HOUSE announces that Miss Elena Stephens, formerly with the Sales Department of Evans Chemetics, Inc., is now associated with its company as a special representative.

KATHLEEN MARY QUINLAN, 20-year-old cosmetic company, is making its debut as a consistent advertiser when it launches a campaign this month by using two and four-color page insertions, featuring eye make-up and straight product copy.

## Books of the Month to Aid You

THEORY OF EMULSIONS, William Clayton. 6 x 9 $\frac{3}{4}$  in. Illustrated and indexed, 492 pages. The Blakiston Co. Fourth Edition, 1943. Price \$10.00.

The leading book on emulsions is brought up to date. Theories and practice are discussed with a greater attempt at a correlation of the two. The patent index is considerably greater in this than in the previous edition.

In general, the theme of this book is theoretical, with considerations of film formation, emulsification and stability together with discussions of the effectiveness of special equipment such as colloid mills and homogenizers.

It is only in Chapter IV that the book falls down, most particularly in the discussion of trade-named emulsifiers, their composition and utility. Little more than a few words describe such products, where in fact each material is in need of at least a short

paragraph of several sentences. For in practice, as differentiated from theory, most emulsifiers are not pure compounds, hence do not behave according to theoretical calculations.

There are a few mistakes in spelling as on page 118, *oleyl* is spelled *obeyl*, and on page 128 *solutions* is spelled *solutons*.

The author reviews to considerable extent work done by the many researchers in the field of emulsions and emulsifiers. The inclusion of a chapter on emulsifying equipment is valuable, since there are no such published data to this reviewer's knowledge.

From the first page forward the book is interesting reading. The subject becomes more complicated as it progresses. But it is a valuable and necessary book for anyone interested in any phase of emulsions. The book is well-made and the type is easy to read.—M. G. de N.



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# U.S.I. CHEMICAL NEWS

November ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1943

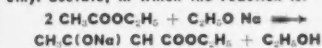
## Sodium Ethoxide Uses Widen in Making War-Essential Drugs

Key Reactions Depend upon Product made Available by U.S.I.

Production of atabrin, the vitally-needed substitute for quinine, as well as of vitamin B<sub>1</sub> and sulfadiazine have tremendously increased the importance of Claisen Condensation reactions. As a result, demand for sodium ethoxide to serve as the condensing agent has multiplied rapidly.

In the preparation of atabrin, sodium ethoxide is used to condense the diethyl amino ethyl chloride with ethyl acetoacetate to form the side chain. In the synthesis of vitamin B<sub>1</sub>, sodium ethoxide is required for the condensations of two intermediates: aceto butyrolactone and sodium formyl beta ethoxy ethyl propionate. For sulfadiazine, sodium ethoxide is used with ethyl acetate and ethyl formate to give ethyl sodium formyl acetate.

The Claisen Condensation type of reaction, using sodium ethoxide, can best be illustrated by the preparation of ethyl acetoacetate from ethyl acetate, in which the reaction is:



(Neutralization of the ethyl sodium acetoacetate gives ethyl acetoacetate.)

These uses for sodium ethoxide may well represent only the beginning. For with the ever-widening possibilities for commercial-scale production of complex organic synthetics, increasing use of Claisen Condensation reactions is bound to be made. Particularly will this be true when such products as ethyl sodium acetone oxalate, acetyl acetone, and aceto butyrolactone become available commercially.

Sodium ethoxide is now supplied by U.S.I. in an alcohol solution known as Anhydrous S.D. 2B, modified with sodium.

## Recovers Alcohol, Acetone By Solvent Extraction

An economical new process is reported for recovering low-boiling alcohols, ketones, aldehydes, etc., particularly from aqueous solutions of less than 5% strength. The process has been shown, experimentally, to require less heat and to permit recovery of many liquids from solutions too dilute to be handled otherwise. It involves solvent extraction, followed by distillation of the extract layer to give the organic liquid overhead.



### Revised Folder on U.S.I. Products

A new descriptive folder listing U.S.I. products and their more common uses is now available upon request.

## Synthetic Rubber Takes Big Tonnage of 'Secondary' Chemicals

Many Important Applications of Chemicals

Other than Butadiene and Styrene Described

The current Government program calls for the annual production of 850,000 long tons of synthetic rubbers: 735,000 tons of GR-S (Buna S); 75,000 tons of GR-I (Butyl); and 40,000 tons of GR-M (Neoprene). In addition, smaller



A synthetic "first" . . . with millions more to come

### Chemistry at War Keynote of Chemical Show

Highlighting the chemical progress which has been crowded into two years of war, the 19th Exposition of Chemical Industries will concentrate on factual, "show-how" information. It promises a stimulating panorama of recent accomplishments in plant conversion, creation of new products, and high speed transition from test tube to tank car production. Madison Square Garden, New York, Dec. 6 to 11.

amounts of Buna N, Chemigum, Hycar, Koro-seal and Thiokol are being manufactured by private companies. Aside from the chief constituents—butadiene, styrene, isobutylene, isoprene, and chloroprene—many other chemicals are required, and although their proportions are small, the total amounts are great. In the processing of the synthetic rubbers, moreover, still other substances are needed; some of these are the same as those used in processing natural rubber, but in greater proportions; some are quite different. The total amounts of all these "secondary" chemicals reach staggering figures.

### Inorganic and Organic

These additional chemicals are both inorganic and organic. Large amounts of alum and soda ash, for example, are required to soften the water used in the polymerization process; sodium metaphosphate is used for preventing corrosion in pumps, pipe lines and tanks; chlorine is employed to keep down slime formation in apparatus; anhydrous ammonia and brine are necessary to furnish refrigeration; tons of rock salt and much sulfuric acid are used in solution to precipitate or coagulate the synthetic latex.

Organic stabilizers, little known compounds which prevent the premature polymerization of the butadiene and styrene while in storage, are present in only about two hundredths of one per cent. Yet on the basis of 748,600 tons of butadiene, this small proportion means about 150 tons, or a third of a million pounds. Furthermore, these stabilizing agents must be removed before the material is emulsified, and for this a solution of sodium hydroxide is required.

(Continued on next page)



One of the new synthetic rubbers, as it emerges on conveyor from the dryer which removes water collected during coagulation.

**Synthetic Rubber Chemicals**

(Continued from preceding page)

The emulsification of the butadiene and styrene requires great quantities of soap, pure sodium stearate. The plants are designed to use soap itself or to make the soap from stearic acid and sodium hydroxide. The polymerization catalyst is added to the emulsified materials, and later a reaction stopper or anti-polymerizing agent is used to arrest the polymerization at the proper stage. (This reaction stopper may be an antioxidant and therefore serve a dual purpose.)

Larger proportions of softeners are generally required in GR-S than in natural rubber. If at least five per cent of a softener is used in every GR-S compound, the total amount would be 36,750 tons or somewhat over 82,000,000 pounds! Softeners must be cheap and the important ones come from coal tar and turpentine products. High-boiling esters such, for example, as dibutyl phthalate, dibutyl sebacate, etc., are in favor in the processing of some of the synthetic rubber compounds.

**Accelerators**

Organic accelerators are important in the vulcanization of GR-S compounds, as with natural rubber. There are variations in the effects obtained, but mercaptobenzothiazole is the leader in both cases. Tetramethylthiuram-mono-sulfide and mercaptobenzothiazoline are also useful. The aldehyde-amine type of accelerator, like the butyraldehyde condensation product with aniline, acts best as a secondary accelerator to "boost" the action of those just mentioned. From 1.0 to 1.5 parts are generally used to 100 of the synthetic rubber. On the basis of 735,000 tons of GR-S, one per cent means 7,350 tons of accelerators.

In the manufacture of Butyl rubber, boiling ethylene is used to refrigerate the reaction mixture. The manufacture of Buna-N requires sodium oleate as the emulsifier, salt for the coagulation, and antioxidants for stopping the polymerization. Furthermore, reclaimed rubber is closely connected with the entire program and the amount now being made is almost double the pre-war production. Here caustic soda and oils from the coal and pine tar industries are widely used.

"Research is the price of progress," and surely at this time, with the wonderful co-operation of rubber chemists and engineers in the great synthetic rubber program, we can expect marvelous advances in rubber technology, and the application of many new chemicals to make the synthetic rubber do even more than natural rubber could do.

**Continuous Process Recovers Coating Materials from Water**

**DETROIT, Mich.**—A method for recovering and reconditioning the excess sprayed coating material picked up by spray-booth water has been patented by two inventors here.

The water-contaminated solids are dissolved in a solvent having a lower boiling point than water, and of the same kind as that normally used in applying the coating material. The mixture is then distilled under vacuum, at a temperature below the boiling point of water. The distillate is condensed, and the solvent returned to the solution of coating material solids. Portions of the solution of water-free coating materials are periodically removed, and water-contaminated solids are added, without interrupting the process.

**Industry Increases Use of Special Liquid Curbay**

Widely used as an extender for molasses in dairy and hog feeds, U.S.I.'s Special Liquid Curbay is finding increasing industrial use as a binder—in foundry core and molding sands, in briquetting, in thickening agents, in impregnating paper. Available in tank-car quantities without allocation limitations, it is handled just like molasses in storage or mixing equipment.

**New Glass Cleaner Patented**

A patent has been granted for a glass cleaner consisting of an aqueous solution of 20 to 50% methyl, ethyl, or propyl alcohol in which 0.02 to 0.2% tetra sodium (or potassium) pyrophosphate is added to prevent haze formation.

**Produces Lower Alkyl Ethers of Methylolurea**

Announcement is made of a patent covering the treatment of dimethylolurea with methyl, ethyl, propyl, or butyl alcohol. The reaction is carried out at a pH of at least 9.0 until an ether of a methylolurea is formed, and then terminated prior to resinification. Termination of the reaction is effected by removal of the ether from the alkaline solution, as by chilling.

**TECHNICAL DEVELOPMENTS**

Further information on these items may be obtained by writing to U.S.I.

**Electrically-conductive rubber**, originally developed for de-icing aircraft propellers, is finding use in explosives manufacture to eliminate the hazard of static electricity and replace former non-ferrous metals subject to corrosion. Resistance of the new rubber is said to run as low as 5,000 to 10,000 ohms per centimeter cube. (No. 749)

**U S I**

**A new paint vehicle**, combining drying, high thinner tolerance and compatibility with most resins is announced. The product is said to possess all the best qualities of linseed oil, plus some desirable new properties, and to allow greater production on limited oil quotas. (No. 750)

**U S I**

**A synthetic filter cloth**, which the maker reports to be highly resistant to both strong acids and alkalis, is facilitating many continuous filtering operations in the synthetic rubber, explosives, and petroleum industries. (No. 751)

**U S I**

**A substitute for morphine**, which has been under chemical tests for three years, is now being made generally available to the medical profession. (No. 752)

**U S I**

**Resiliency measurements**, important to manufacturers and consumers of rubber and other extensible materials, is facilitated by a new instrument which measures the rebound of a weighted plunger dropped from a predetermined height. (No. 753)

**U S I**

**A new insulating glass**, suitable for ovens and furnaces as well as for towers, tanks, etc., is announced. Of low heat conductivity due to its cellular structure, the glass is said to be fire and vapor-proof and impervious to moisture. (No. 754)

**U S I**

**Sealing the seams of bolted tanks** used to store gasoline and other fuels is possible with a new synthetic rubber compound which comes in strip form. The strip is claimed to be so flexible it can be wound, at minus 70°F., on a 1/2-in. rod without cracking. (No. 755)

**U S I**

**A new spray-degreasing booth**, reported by the manufacturer to hold losses of war-scarce solvents to new low figures, is announced. (No. 756)

**U S I**

**Pecan shell oil** is now being offered for sale in large quantities. Said to be the equal of olive oil for table use, it is also useful in the making of dyes and high-grade soaps. (No. 757)

**U S I**

**A new adhesive** said to be both thermoplastic and thermo-setting is reported in use in the production of plywood for military helicopters. The new material is stated to set in 20 minutes, as a permanently tough, heat-resistant, insoluble bond which will withstand three hours of boiling in water. (No. 758)

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Acetoacet-ortho-chloranilide  
Acetoacet-ortho-toluidide  
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Ethyl Benzoylacetate  
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November, 1943 79

# Aladdin's Lamp 1945 A.D.

Out of the laboratory, the Aladdin's Lamp of modern times, a host of miracles are emerging to keep American industry humming at top speed.

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# NEWS and EVENTS

## Florasynt Laboratories announces election of new officers

With the retirement from the organization of Louis A. Rosett, Florasynt Laboratories, Inc., announces the appointment of officers of the company's directorate and subsidiary affiliations.

Dr. Alexander Katz, organizer and chief chemist, and former vice-president, assumes the presidency of the company's widespread activities and services. Dr. William Lakritz becomes its vice-president. He has been the organization's associate chemist for more than 20 years and has headed the Chicago office and its central and mid-western activities.

Joseph H. Fein, well-known to all in the industry and another member of the organization's staff who has been with Florasynt for the past 20 years, has been elected treasurer. As in the past he will continue in charge of the company's Purchasing Department with headquarters at the main offices and plant, 1513-1533 Olmstead Avenue, New York, N. Y.

David Lakritz, for years also a member of the chemical staff, becomes chief chemist in charge of production in the New York plant, and Leonard Katz continues in charge of production of the company's West Coast activities. Charles P. Kramer, who has been general counsel for Florasynt since its inception in 1916, continues as secretary. Charlotte F. Senior continues as ass't secretary and ass't treasurer.

## C. C. Concannon to aid Chile in development of natural resources

C. C. Concannon, chief of the Chemical Unit of the Bureau of Foreign and Domestic Commerce of the Department of Commerce has been loaned to the Chilean Government for a year to aid the Chilean Government to develop its fishing grounds, one of the richest in the world. The production of fish oils, vitamins, etcetera, is obviously entailed and there may be an opportunity for export to the United States or other markets where these items are greatly in demand.

"Another natural resource," says Mr. Concannon, "which has not been ex-

ploited is the forested area of Chile which extends some 500 miles south of Santiago and inland for 50 miles. This is a mixed growth subject to the production of lumber, wood pulp and other chemical processing."

Chile is also rich in numerous minerals, in water power, etc.

Mr. Concannon is ideally fitted to undertake such a task as his experience with the Department of Commerce under Herbert Hoover as head, brought him in contact with the Chilean Government in the development of nitrate, iodine, potash and camphor. Also as a member of the Federal Narcotic Control Board for several years, he was closely associated with the drug industry. These are just a couple of his connections that will be of assistance to him in handling this important work.

## F. I. Rowe of Shulton, on South American survey tour

Shulton, Inc.'s manager of the Export Division, Frederic I. Rowe, has left for a tour of several South American countries, including Mexico, Colombia, Venezuela and Cuba. He expects to return the first of January.

Mr. Rowe's purpose on this trip is to make a market survey for use in his work as export manager in charge of development of foreign business—a part of Shulton's post-war program.

Mr. Rowe, a graduate of Rutgers School of Pharmacy, spent 20 years in the export pharmaceutical and toiletries business with the Sydney Ross Company during which time he traveled extensively through the West Indies. He was also manager of the branch in Peru for four years in charge of sales and production. Mr. Rowe was also with the Latin-American Advertising and Far Eastern Departments. He joined Shulton last month as export manager.



Frederic I. Rowe

## René Forster organizes firm to succeed Bayonne Company

René Forster announces the organization of the René Forster Co. with executive offices at 404 Fourth Ave., New



René Forster

York, N. Y., to carry on the essential oil, synthetic and aromatic chemical business formerly conducted by the Bayonne Co. Full responsibility for the fulfillment of all contracts of the Bayonne Co. is assumed by the new concern.

Mr. Forster was formerly vice-president and general manager of the Bayonne Co. and has been identified with the trade for eleven years, six years abroad and five years in the United States. Accordingly, he brings to his new task broad and well-rounded experience.

He began his business career with Volkart Brothers in Winterthur, Switzerland. Subsequently he worked with Laboratories Sauter, S. A., Geneva. Then he joined Les Usines de l'Allondon, Geneva, Switzerland. Subsequent to that he was with the Allondon-Bayonne Co., Inc., in New York which was succeeded by the Bayonne Co., Inc.

Mr. Forster is a native of Switzerland and received his education in Switzerland and Germany. He now resides in Scarsdale, N. Y. For recreation he enjoys horsemanship and is an expert rider. As he is the owner of three saddle horses he continues this hobby. He is a member of the Westchester Country Club and the New York Athletic Club.

## L. R. Root heads the 1944 T.G.A. convention committee

May 18 and 19, 1944, have been selected by the Toilet Goods Association, Inc., as the dates for its annual convention. The association is fortunate in again having L. R. Root of Scovill Manufacturing Co. as chairman of the convention committee.

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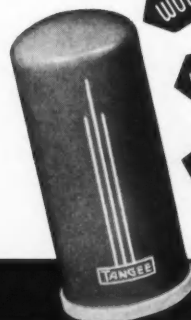
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## L. T. Crowley heads Foreign Economic Administration

L. T. Crowley is the head of the newly-formed Foreign Economic Administration. Mr. Crowley has announced the organization "accomplishes a complete unification and streamlining of the foreign economic operations formerly carried on by the OEW, and Office of Foreign Relief and Rehabilitation, Office of Lend-Lease Administration, foreign procurement activities of Commodity Credit Corporation, and parts of Foreign Economic Coordination as may be transferred from the State Department. . . . Effective liaison arrangements are being worked out between FEA and State Department. Under the terms of the executive order establishing FEA, the administrator is given authority for foreign economic operations in conformity with our foreign policy as defined by the Secretary of State. . . . The Bureau of Supplies, Imports Procurement and Supply Branch will be responsible for the procurement of supplies in foreign countries, the direction of development work, and the import of all goods into the United States. . . . The Requirements and Supply Branch, responsible for assembling and screening all foreign requirements, claimancy before WPB and WFA, programming the export of Lend-Lease goods, and controlling commercial exports. William H. Schubart is acting director of the Bureau of Supplies, and Sidney H. Scheuer is assistant director in charge of procurement in foreign countries and import of all goods into the United States. Executive Order 9385 transferred from WFA to FEA procurement of food in foreign countries, also food facilities, machinery and apparently anything classified as allied to food by WFA. The order specifically directs FEA shall perform its functions consistently with directives issued to FEA by WFA, and by similar directives issued jointly by FWA and WPB when used for industrial purposes. WFA and WPB are authorized to specify quantities, priorities, times and places of delivery, sources and prices. Details covering the program have not yet been defined. Apparently private purchases will not be permitted. Under the general foreign policies defined by the State Department, the FEA as functional organization will arrange with other Allied countries the apportionment of importable goods, such as, for instance, essential oils and gums, and will again apportion to the military whatever they require, and then permit the import of any balance to the United States. How imports will be allocated to private firms in the United States does not yet appear. Nor is it yet clear how purchases will be financed. A recently-inducted official of the U. S. Commer-

cial Corporation proposes that private firms make their purchases of goods available abroad through the corporation and that such purchases be pooled for import in government bottoms provided therefore, and then distributed pro rata according to purchase after arrival in this country. In effect this would be like buying the privilege of taking your proportion out of the grab bag. It does not yet appear who would set the prices abroad. Apparently shipping space and other facilities would be determined by FEA. Present indications would seem to point to the fact that State Department and the various boards heretofore functioning on these aspects would relinquish these functions to FEA. It is not clear at this time how the floral oils and citrus oils reported to be available in North Africa and Italy will be distributed in the United States. Trade agreements undoubtedly will come under scrutiny of the Anti-Trust Division of the Department of Justice.

### Evans Chemetics, Inc., expands its facilities

Evans Chemetics, Inc., has expanded its facilities by leasing 22,000 square feet of space in the Long Island University Building at 300 Pearl Street, Brooklyn, N. Y. This additional space will be used by the company in addition to its present facilities in the Port Authority Building, New York City, and at Waterloo, N. Y., to meet the increased demand for its chemical specialties.

### "All-Industry" Luncheon Meeting at the Waldorf

Approximately 400 members of the toilet goods and allied industries attended the "All Industry" luncheon meeting at the Waldorf-Astoria, Oct. 26.

C. A. Willard, Cosmetics & Toiletries Section, WPB, and P. R. Casey, head, Cosmetics Unit, OPA, were guests of the Association meeting. Mr. Willard reported that the possibility of allocation of cellulose acetate for lipstick manufacture was somewhat brighter and that a reasonable quantity would probably be allocated for November.

Mr. Casey stated that delays in securing approval of prices under MPR 393 were often caused by failure of applicants to fill out the proper form correctly.

The principal address, by Wallace Werble, editor, "Food, Drug and Cosmetic Reports," Washington, D. C., gave a comprehensive study of the general situation as it affects the cosmetic industry.

## Cosmetic Credit men elect new officers

New officers were elected at the October 21 meeting of the Drug, Cosmetic and Chemical Credit Men's Ass'n in the Hotel Duane, New York, N. Y. Edward Kavanagh was elected chairman; E. P. Utter, vice-chairman; and Joseph Lynch, treasurer. Edward F. Maloney was chosen assistant secretary and, of course, Nat Otte was re-elected secretary. After current reports were considered, the entertainment committee consisting of Louis Candee and Edward Maloney reported on plans for the annual holiday party which will be held in January. The treasurer's report by E. P. Utter was read and accepted and showed the affairs of the association to be in a healthy condition.

## N. H. McElroy elected to board of directors of P & G

At the annual stockholders meeting of Procter and Gamble Co., Neil H. McElroy, manager of the company's advertising and promotion department, was elected to the board of directors, and subsequently elected by the directors as vice-president in charge of advertising and promotion. Also elected to the board was Frederick V. Geier, president of the Cincinnati Milling Machine Co.

In addition to Mr. McElroy, the board elected the following officers: Richard R. Deupree, president; Renton K. Brodie, vice-president; Ralph F. Rogan, vice-president; Floyd M. Barnes, vice-president in charge of purchases; Harvey C. Knowles, vice-president in charge of sales; Kelly Y. Siddall, comptroller; H. Truxtun Emerson, secretary; Guy B. Taylor, William H. Watters and Lowe H. Wiggers, assistant secretaries; Walter H. Tuttle, treasurer; George S. Woodward, Jr., and John W. Friend, assistant treasurers.

## Calif. Flavoring Extract Mfrs.' Ass'n holds monthly dinner-meeting

One of the largest attendances in the history of the organization was a feature of the monthly dinner-meeting of the Flavoring Extract Manufacturers' Ass'n of California, held at the Los Angeles Athletic Club, Los Angeles, Calif. In the absence of President Charles S. Marston, Jr., Albert E. Evans, vice-president, presided. F. A. Fetch introduced the speaker of the evening, Mrs. Norma Young, home economist for the Hollywood radio station KHJ, who spoke on post-war possibilities for glamorizing flavoring products. Two moving pictures dealing with the war in Russia and Italy provided evening entertainment.

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Scarcity of natural flower oils make these imitation flower oils interesting rivals to be used by themselves or in conjunction with natural flower oils.

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### **Florasynth Detroit office moves to new headquarters**

Announcement is made by Dr. William Lakritz, executive of Florasynth Laboratories, Inc., to the effect that the organization's Detroit headquarters and new offices are now located at 6432 Cass Avenue, in that city, and are under the management and supervision of L. W. Bogner. With these new offices, the Florasynth organization once again augments its facilities for service on a broader scale to its clients throughout the territory. The move is expected to offer increased benefits in the closer cooperation with clients and in the analysis of customer problems relating to raw materials and production in the present war-affected markets and in the possibilities for post-war developments.

### **Allied Drug and Cosmetic Ass'n of Michigan holds dinner-meeting**

The first winter meeting of the Allied Drug and Cosmetic Ass'n of Michigan was held Oct. 27 at the Detroit Leland Hotel, Detroit, Mich.

### **P. J. Weber elected ass't treasurer of Hercules Powder Company**

Paul J. Weber, economist and head of the economic research department of Hercules Powder Company, Wilmington, Del., was recently elected assistant treasurer at a meeting of the board of directors, the company has announced. Mr. Weber, who joined Hercules in 1934 as economic statistician and head of the statistical department, will continue the direction of economic research of the company in addition to his duties as assistant treasurer.

### **Owens-Illinois Company entertains for Pacific Coast drug firms**

The Owens-Illinois Pacific Coast Co. entertained at dinner on two separate occasions last month at the Ambassador Hotel, Los Angeles, Calif., the executives and sales staffs of the Brunswick Drug Co., and the Western Wholesale division of McKesson & Robbins, Inc. Lee Connick, manager of the Los Angeles organization of Owens-Illinois, presided both evenings. The entertainment program in each case included a dramatic tribute to the companies and representatives. The atmosphere was designed to recapture the Gay Nineties.

### **Drug and Chemical Industries Ass'n holds final golf tournament**

The final golf tournament of the Associated Drug and Chemical Industries of Missouri, Inc., was held Oct. 26 at the Bellver Country Club, St. Louis, Mo.

Prize winners included: Franc Bara-

da, Fritzsche Brothers, Inc.; Gene Meyer, United Drug Co.; Jack Berkley and Cy Merrell, Monsanto Chemical Co.; Harry White, James F. Ballard, Inc.; George Erwin, Puro Co., Inc.; Glenn O'Neal, Dow Chemical Co.; and Bob Kieth, Kieth-Victor Pharmaceuticals.

The season prizes were won by H. I. Beckenholdt, Commercial Solvents; and Art Kroeger, Monsanto Chemical Co.

### **J. B. Mathews, Shulton, Inc., leaves to join U. S. Army**

Jack B. Mathews, Shulton sales representative, has joined the U. S. Army, having been inducted in October. Mr. Mathews handled accounts in Maryland, Washington, D. C., Delaware, Virginia and Pennsylvania.

### **Dr. I. Hochstadter joins Gallowhur as research administrator**

Dr. Irving Hochstadter, former president and technical director of Hochstadter Laboratories, Inc., and Still & Van Sicken, Inc., has been appointed as research administrator to Gallowhur & Co., New York, N. Y., manufacturers of Skol and Skat. Dr. Hochstadter has been consultant and technical advisor to the glue and gelatine industry, and has done consultant work for the soap and detergent industry.

### **N.W.D.A. asks wholesale druggists to salvage collapsible tubes**

Announcing that more than 955,912 pounds of pure tin have been added to the nation's stockpile from empty tooth paste and other similar tubes during the past year, the National Wholesale Druggists' Ass'n, New York, N. Y., has appealed to wholesale druggists everywhere to collect this type of salvage from retail druggists "to help fight the war."

The empty tubes are collected by wholesale druggists from retail drug stores and sent by them to the Tin Salvage Institute, 411 Wilson Avenue, Newark, N. J.

### **Alkali Works, Inc., awarded white star for "E" flag**

In recognition of its continued contributions to the war effort, the Niagara Falls plant of the Mathieson Alkali Works, Inc., has been authorized to add a white star to its Army-Navy "E" award, which was presented to the firm last February. The white star signifies that efficiency has been continuously maintained during the succeeding six-month period.

Mathieson produces a variety of vital war materials, including chlorine, ammonia, caustic soda, soda ash, etc.

### **Goldschmidt Chemical Corp. appoints E. M. Tysdal**

Goldschmidt Chemical Corp., 153 Waverly Place, New York, N. Y., announces that E. M. Tysdal has returned to his post as its sales representative in the Mid-West with headquarters at 325 W. Huron St., Chicago, Ill.

### **American Home Products shows substantial 1943 sales increase**

Alvin G. Brush, chairman of American Home Products Corporation, New York, N. Y., has announced that sales increased 44 per cent in the first nine months of 1943. Profits before taxes were 40 per cent higher over the corresponding period and net earnings after taxes showed a gain of 14.5 per cent.

Consolidated profits of the corporation and its subsidiaries for the period ending Sept. 30, 1943, aggregated \$10,169,595.39 compared with \$7,250,588.07 in the same period of 1942. After provision for foreign income and profits taxes and Federal income and excess profits taxes estimated under the revenue act of 1942, net profit amounted to \$3,262,111.47 equivalent to \$3.56 per share on the average number of shares (916,599) outstanding during the period. This compares with \$2,848,483.31 during the same period of 1942 equivalent to \$3.34 per share on the average number of shares (852,278) outstanding during the period.

### **Exposition of Chemical Industries to be held December 6-11**

The 19th Exposition of Chemical Industries will be held at Madison Square Garden, New York City, Dec. 6-11. Chairman of the advisory committee for the exposition is M. C. Whitaker, vice-president of American Cyanamid Co., New York, N. Y.

### **Drug, Chemical and Allied Trades Section holds annual meeting**

The Drug, Chemical and Allied Trades Section of the New York Board of Trade, Inc., held its 53rd annual meeting and election on Nov. 16, at the Drug and Chemical Club, New York City. Julius Henry Cohen, a recognized authority on war contract cancellations, was guest speaker.

### **Radiant Beauty Products, Inc., granted charter to make cosmetics**

The Virginia State Corporation Commission has granted a charter to Radiant Beauty Products, Inc., Richmond, Va., "to manufacture and deal in beauty products, cosmetics, etc." T. H. Winfield is president of the firm. Maximum capital is \$15,000.

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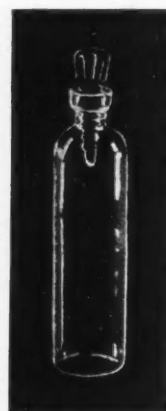
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### General mills enters the soybean industry

James F. Bell, chairman of the Board of Directors of General Mills, has announced that the Board had exercised its option to purchase the properties of the American Crystal Sugar Company, Belmond, Iowa, for the purpose of converting the plant into a soybean processing plant.

Harry Bullis, president, stated that the war-time necessity for added soybean producing capacity to meet protein and oil shortages constitutes the immediate reason for the company's entrance into this field. "However, the multitudinous peace-time possibilities of soybean oil and meals furnish many potential possibilities for production and employment after the war," said Mr. Bullis. The operations will be under the direction of Whitney H. Eastman, recently appointed president of the new General Mills Vegetable Oil and Protein Division.

### Vick Chemical Company elects new members to board of directors

Vick Chemical Company has announced the election of four new members to the board of directors at the

annual stockholders meeting held in October. New members of the board are: Robert M. Dunning, vice-president and export manager; E. L. Mabry, assistant to the president; Herman A. High, sales manager, and Thurston W. Merrell, president of William S. Merrell Company, Cincinnati, Ohio.

### Woods and Chatellier, Inc. move to New Rochelle

Woods and Chatellier, Inc., formerly of 516 Fifth Avenue, New York City, has announced the removal of its offices from that address to 481 Main Street, New Rochelle, N. Y. The new telephone number is New Rochelle 2-9661.

### W. F. Zimmerman forms new private brand company

W. F. Zimmerman, Inc., has been organized by William F. Zimmerman at 404 Fourth Ave., New York, N. Y., to manufacture private brand cosmetics. Mr. Zimmerman has been associated with the industry for many years and is one of the founders and active participants of the BIMS of New York. He reports that he has purchased a well-equipped manufacturing laboratory.

### Plans progress for OPA price regulation of Christmas packages

Preliminary action on the proposed government price regulation of Christmas packages and sets of cosmetics for the 1944 season has begun, according to P. Raymond Casey, head of the cosmetic unit of the chemicals and drugs branch of OPA.

Recommendations already made by Mr. Casey are more in accord with suggestions put forth by members of the industry than with the present section 24 of MPR 393 or with recent proposals for regulation of the 1943 season, which were later discarded.

### F. N. Burt Company moves plants to obtain labor

To relieve the effects of a serious labor shortage in the area, the F. N. Burt Co., Buffalo, producer of paper containers for the drug trade, has leased two plants in areas where there is no great scarcity of workers. The company is planning to move about 10 per cent of its machinery to its new plants in Webster and Williamsburg, N. Y., and negotiations are under way to lease a plant in Watertown for the same purpose.

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Hair Dyes & Hair Dyeing (Redgrove & Foan)	5.00
How to Make and Use a Small Chemical Laboratory (Raymond Francis Yates)	1.00
Manual of Cosmetics (Lazar)	5.10
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Modern Cosmetology (Ralph G. Harry)	5.00
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### Packaging Institute holds its annual meeting at Hotel New Yorker

The Packaging Institute Inc., 342 Madison Ave., New York 17, N. Y., held its annual meeting on November 4 and 5, 1943, at the Hotel New Yorker.

Among the various papers presented at this meeting of especial interest to the cosmetic industry was one by Charles L. Sheldon, Hood Rubber Co., Watertown, Mass., who spoke on "What is Today's Packaging Picture?" In his talk he stated that "instead of all containers being handled by one section of WPB, a recent change has been made so that now fiber and corrugated shipping containers as well as folding and set-up boxes are in a new containers division and the balance of the containers remain in the old division." This Mr. Sheldon could not understand.

"As the situation now stands, if you are a user of fiber cans you see one division, and then go to another for your paper shipping containers. If you use wooden boxes and also paper boxes you will have to contact two divisions," Mr. Sheldon continued that "it seemed the most logical plan to have all containers under jurisdiction of one man."

Another interesting speaker was J. H. Toulouse, Owen-Illinois Glass Co., Toledo, Ohio, who spoke on glass containers.

"The most pressing problems in the industry," Mr. Toulouse asserted, "are manpower and fuel. A decrease in either of the factors would curtail production. Several of the larger plants have idle furnaces, used chiefly in rotation during furnace rebuilding, which could be used for making additional containers if manpower were available."

Frederic Remington, Peerless Tube Co., Bloomfield, N. J., told the group assembled that the "compulsory collapsible tube salvage campaign is controlled largely by the amount of tin which is being removed by the Tin Salvage Institute. At the end of June this was 26 per cent, but a fresh sampling from stores all over the country is now being made by the WPB to determine the current percentage.

"When this percentage gets down to an unprofitable salvage basis," he continued, "efforts should then be made by the collapsible tube industry, packaging groups and users of tubes to have the restriction removed."

Mr. Remington further stated that he did not believe that any additional allotment of tin would be made to the tube industry. Inasmuch as tin remains in very short supply, he believed that even less tin will be granted until the industry is almost entirely on a lead production basis.

Walter D. Lunch, vice-president, National Folding Box Co., presided.

### Glass Industries creates

#### good will with all—young and old

Glass Industries, Inc., 10 West 33 St., New York, N. Y., has received a very interesting letter from a young lady interested in bottles—Miss Helen Davidowitz, age eight years. The letter follows:

"Our class voted to study about glass this term. We think glass is an interesting topic because it is so useful. Would you please help us get information and facts for our research committee? We love pictures too. Thank you very much."

In reply to this letter Glass Industries wrote Helen describing various phases of the glass industry for which she was very grateful and replied as follows:

"Dear Mr. Grunberg.

Thank you very much for the nice things you sent us. We used the books and pictures for our committee reports.

We would love to have the samples you wrote about and anything that will help us. Besides the bottles look cute in the pictures. My teacher, Mrs. Appel, says she would like to pay for the things you send. We are going to put all the bottles in a little museum."

Helen and her classmates, at the tender age of eight, have been impressed by Mr. Grunberg's letter with an appreciation of bottles. This appreciation may put these children on Glass Industries list of customers at some later date. At least the seed of appreciation and good will has been sown.

## Obituaries

### Jessica Ogilvie

Miss Jessica Ogilvie, founder and for 36 years head of the firm of Ogilvie Sisters, New York, N. Y., hair and scalp specialists, died in the Harkness Pavilion of Columbia Presbyterian Medical Center Oct. 23.

Born in 1885, the fourth daughter of Catherine and John Ogilvie, of San Francisco, Miss Ogilvie came to New York in 1907 with her finished formula for the original Ogilvie preparation. Having been the victim of a malarial disorder which affected the health of her own hair, she had long been experimenting with the preparation intended for use on the scalp and hair and which formed the basis of the famous Ogilvie preparations.

After entering upon a career as a scalp specialist, Miss Ogilvie enlisted the aid of her family to carry on the business which gradually gained international reputation.

At the time of her death, Miss Ogilvie held membership in the Women's City Club, the Advertising Club, Publicity Club of New York, the Westchester Country Club, Metropolitan Opera Club and the National Opera Club.

Surviving are four sisters: Mrs. Clara Ogilvie MacInnis, Mabel Ogilvie Carter and Georgina Ogilvie Tweddle, of New York, Miss Elizabeth Ogilvie, of Washington, D. C., William Ogilvie, brother, of Philadelphia, and John H. Curry, brother-in-law.

A requiem mass for Miss Ogilvie was held at St. Patrick's Cathedral.

### Philip M. Lopez

Philip M. Lopez, senior member of Lopez and Baker Laboratories, Elmira, N. Y., died Sept. 21, following a long illness.

With the active assistance of his widow, Mrs. Harriet N. Lopez, Mr. Lopez' partner in business, Thomas J. Baker, will carry on the work of the laboratories.

### George S. Turner

George S. Turner, secretary and treasurer of the J. S. Turner White Metal Co., was killed in an automobile accident at his farm September 12. With his brothers, J. Everton Turner, president, and Harry Turner, vice-president, Mr. Turner directed the affairs of the company being in charge of production. He had been associated with the concern ever since he left school and knew every detail of the art of manufacturing and decorating collapsible tubes.

He is survived by his widow, two brothers and two children. Mr. Turner lived a quiet life and his modest ways endeared him to everyone. His chief interest aside from his business was his farm where he raised livestock.

### Mrs. Harry H. Heminway

Mrs. Charlotte Lewis Heminway, wife of Harry H. Heminway, president of the Waterbury Paper Box Co., Inc., and the Watertown Trust Co., died at her home in Watertown, Conn., Oct. 31. Surviving besides her husband, are two sons, Merritt and Barton Heminway.

### Harlan E. Brown

Harlan E. Brown, 58, for the past six years vice-president and manager of the Portland, Ore., division of McKesson and Robbins, Inc., died suddenly Nov. 5, at his home in Beaverton, Ore.

Mr. Brown, who first became associated with McKesson & Robbins in 1937, was first vice-president of the National Wholesale Druggists' Ass'n.

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- 2—Colten #3 Toggle Presses.
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## Uncertain Market Jogging Along

**B**UYING of essential oils and aromatic chemicals for the account of perfumers and makers of toiletries was spotty over the past month. Glycerine is becoming easier to obtain for manufacturing, but there remains the problem of securing other basic materials to complete finished products including lanolin and a general line of aromatic solvents.

With seasonal influences at work, however, more interest is being shown in various oils used in pharmaceuticals and extracts for confections and food products.

### OPA ON DOMESTIC DRUG PRICES

Announcement by OPA, removing from price control all domestic drugs, wild or cultivated, crude or milled, was received in oil trade circles with considerable interest, especially in the light of recent developments which have been taking place among the various domestic oils. The removal of price regulations on American drugs was due according to OPA "to the confusion resulting from partial control."

Production of various domestic oils requires labor which has been exceedingly difficult to obtain, and dealers have in some cases been forced to drop certain oils from their price lists, explaining that because of rising costs and low price ceilings they would be unable to continue to sell these articles.

### PEPPERMINT TRADE AT LOW EBB

Cedarwood, avocado, cedarleaf, wormseed, wormwood and juniper are among some of the oils produced here. Among other domestic oils, trade in peppermint has been at a standstill because of the recent government order freezing

all stocks. A good inquiry continued for spearmint, but dealers without offers from the country, were unable to accept orders for spot goods. The market for California lemon oil remained strong. Producers are well sold ahead, and it is not likely any relief in the tight position of the market will be noted until the new crop is available early next year. The late reduction in California orange oil has virtually removed the Brazilian variety as a disturbing factor. Some trade factors look for a steadier market over the balance of the year. Prior to the reduction in domestic orange, Brazilian oil had been offered at below cost, according to reports.

In the aromatic chemical market, prices on anethol showed a downward tendency. Production of the article by reason of a more favorable crude material supply situation has been increased to a point exceeding demand. Few other price movements were noted in aromatics throughout the period under review.

### BRAZILIAN MENTHOL LOTS SMALL

Additional small lots of Brazilian menthol arrived here without having the slightest influence upon the market. Trade factors point out that with the major source of supply remaining cut off by the war, there is little hope of ever relieving the acute shortage of material that will be noted over the winter season. Some reliable exporters in Brazil discontinued quoting prices for forward delivery explaining that manufacturers there are in an over-sold position.

Caustic potash and other soap-making chemicals are in a more sensitive position than ever before since production has been stepped up to record

levels because of the war. Turn of events in Europe could easily bring about the problem of surpluses by reason of contract cancellations. The contracting season has opened earlier than usual this year, due in part to current labor problems and the threat of more serious transportation delays.

On November 1, all forms of synthetic camphor, crude and refined were advanced one-half cent per pound. It was the first change in the market since last February. The upward adjustment in schedules was reported necessary to meet higher crude material costs.

### VANILLA BEANS FROM MADAGASCAR

New lots of Bourbon vanilla beans arriving on a direct steamer from Madagascar were found to be excellent in quality. Dealers lowered prices slightly on the few lots that remained unsold, but the supply of all varieties of beans is rapidly dwindling, and it is quite possible a complete reversal in the trend will be noted as soon as unsold lots are disposed of.

It will be several months before new crop Mexican beans will be available in this market, and stocks of old crop goods are badly depleted. The coming crop of Mexican beans is likely to be smaller than earlier estimates had indicated. Thus the long term outlook is regarded as exceedingly firm.


### TAHITI BEAN SUPPLY OUTLOOK

A steamer scheduled to pick up beans at Tahiti had been diverted to another port, thus the outlook with regard to early replacements of Tahiti's does not appear any too promising.

Among the gums, Arabic displayed a weak tone throughout the greater part of the period under review. Spot prices, it is pointed out, are regarded as low, however, with the recent downward trend having been carried too far because of speculative influences.

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**Raw Materials**  
**Aromatic Chemicals**  
**Essential Oils**  
**Imports**

for

**Perfumery · Soap · Food · Flavors**

**Gerard J. Danco**

INCORPORATED

333 SIXTH AVENUE, NEW YORK, N. Y.  
Cable Address: CODAN, New York

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, and MARCH 3, 1933, OF THE AMERICAN PERFUMER AND ESSENTIAL OIL REVIEW, published monthly at Philadelphia, Pa., for October 1, 1943.  
COUNTY OF NEW YORK ss: :

Before me, a notary public in and for the State and County, aforesaid, personally appeared Harland J. Wright, who, having been duly sworn according to law, deposes and says that he is the Publisher of THE AMERICAN PERFUMER AND ESSENTIAL OIL REVIEW and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Harland J. Wright, 9 East 38th Street, New York 16, N. Y.; Editor, Harland J. Wright, 9 East 38th St., New York 16, N. Y.; Managing editor, none; Business Manager, William Lambert, 9 East 38th St., New York 16, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Robbins Publishing Co., Inc., 9 East 38th St., New York 16, N. Y.; J. H. Moore, 9 East 38th St., New York 16, N. Y.; Gertrude A. Moore, Indian Head Point, Riverside, Conn.; F. C. Kendall, 9 East 38th St., New York 16, N. Y.; Natalie Aldrich Kendall, Hardwell Road, Milburn, N. J.; A. E. Lindquist, 9 East 38th St., New York 16, N. Y.; H. O. Andrew, 9 East 38th St., New York 16, N. Y.; M. M. MacCullum, 9 East 38th St., New York 16, N. Y.; R. G. Allison, 9 East 38th St., New York 16, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

HARLAND J. WRIGHT,  
(Signature of Publisher)

Sworn to and subscribed before me this 30th day of September, 1943.

ANNA L. HARTMANN,  
(My commission expires March 30, 1945.)



# PRICES IN THE NEW YORK MARKET

(Quotations on these pages are those made by local dealers, but are subject to revision without notice)

## ESSENTIAL OILS

Almond Bit, per lb.	3.50@	4.00
S. P. A.	4.75@	5.10
Sweet True	2.00@	2.25
Apricot Kernel	.50	Nom'l
Amber, rectified	1.35	Nom'l
Angelica Root	125.00@	150.00
Anise, U. S. P.	3.85	Nom'l
Imitation	1.75@	2.10
Aspic (spike) Span.	5.00@	5.25
Avocado	.90@	.95
Bay	1.75@	2.50
Bergamot	25.00	Nom'l
Brazilian	10.00@	
Artificial	4.00@	9.25
Birch, sweet	2.50@	5.00
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	5.00	Nom'l
Cade, U. S. P.	1.50@	1.75
Cajeput	2.00@	2.75
Calamus	22.50@	35.00
Camphor, "white," dom.	.30@	.35
Cananga, Java, native	10.00@	11.25
Rectified	11.50@	13.00
Caraway	15.50@	17.50
Cardamon	30.00@	35.00
Cassia, rectified, U. S. P.	12.00	Nom'l
Cedar leaf	1.10@	1.25
U. S. P.	1.75@	2.00
Cedar wood	.65@	.80
Celery	24.00@	26.00
Chamomile	150.00	Nom'l
Cinnamon	10.50@	32.00
Citronella, Ceylon	1.00@	1.25
Java	3.25	Nom'l
Cloves, Zanzibar	1.75@	2.00
Copaiba	.80@	.85
Coriander	30.00@	32.00
Imitation	8.00@	14.00
Croton	3.00@	3.75
Cubebs	5.25	Nom'l
Cumin	8.50@	10.00
Dillseed	7.00@	7.50
Erigeron	2.15@	2.50
Eucalyptus	1.55	Nom'l
Fennel, Sweet	3.25@	4.00
Geranium, Rose, Algerian	15.50@	16.00
Bourbon	14.00@	16.00
Turkish	4.95@	5.50
Ginger	22.00@	23.00
Guaiac (Wood)	5.00@	6.10
Hemlock	1.45@	1.50
Substitute	.55@	.60
Juniper Berries	15.00	Nom'l
Juniper Wood, imitation	.75@	.80
Laurel	5.00	Nom'l
Lavandin	7.75@	8.25
Lavender, French	10.00@	12.00
Lemon, Calif.	3.25@	
Lemongrass	1.05@	1.25
Limes, distilled	6.25@	7.75
Expressed	11.00@	11.75
Linaloe	3.75@	4.10
Lavage	95.00	Nom'l
Marjoram	5.50@	7.00
Neroli, Bigarade P.	340.00	Nom'l
Petale, extra	325.00	Nom'l
Olibanum	5.00@	5.75
Opopanax	3.00	Nom'l
Orange, bitter	4.50@	5.00
Brazilian	1.25@	1.50
Calif., exp.	1.25@	1.50
Oris Root, abs. (oz.)	135.00@	
Artificial	36.00@	40.00

Pennyroyal, Amer.	3.25@	4.10
European	3.15@	4.10
Peppermint, natural	6.00	Nom'l
Redistilled	6.30	Nom'l
Petitgrain	1.65@	2.00
Haitian	2.25@	
Pimento	4.00@	7.75
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25@	4.80
Rose, Bulgaria (oz.)	25.00@	32.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	1.75@	3.00
Sage	7.50@	9.00
Sage, Clary	40.00	Nom'l
Sandalwood, East India	6.00@	6.25
Sassafras, natural	2.10@	2.35
Artificial	1.50@	1.80
Snake root	10.00@	12.75
Spearmint	4.00	Nom'l
Thyme, red	2.60@	3.25
White	3.25@	5.00
Valerian	30.00	Nom'l
Vetiver, Java	32.00@	35.00
Wintergreen	5.25@	8.50
Wormseed	5.00@	5.25
Ylang Ylang, Manila	38.00	Nom'l
Bourbon type	18.00@	20.00

## TERPENELESS OILS

Bay	2.75@	3.00
Bergamot	49.00	Nom'l
Grapefruit	65.00@	
Lavender	28.00	Nom'l
Lemon	40.00@	55.00
Lime, ex.	100.00@	150.00
Distilled	50.00@	67.00
Orange sweet	100.00@	155.00
Peppermint	10.00@	14.00
Petitgrain	3.50@	4.00
Spearmint	5.00@	6.00

## DERIVATIVES AND CHEMICALS

Acetaldehyde 50%	1.90@	2.75
Acetophenone	1.60@	1.75
Alcohol C 8	7.50@	10.00
C 9	13.25@	15.00
C 10	7.75@	12.00
C 11	11.50@	15.00
C 12	7.20@	8.50
Aldehyde C 8	22.50@	28.00
C 9	31.50@	32.00
C 10	22.00@	29.00
C 11	22.00@	26.00
C 12	25.00@	30.00
C 14 (so called)	9.00@	9.50
C 16 (so called)	8.25@	9.00
Amyl Acetate	.50@	.75
Amyl Butyrate	.90@	1.10
Amyl Cinnamate	4.50@	5.80
Amyl Cinnamate Aldehyde	2.75@	5.00
Amyl Formate	1.00@	1.75
Amyl Phenyl Acetate	3.75@	4.00
Amyl Salicylate	.85@	1.00
Amyl Valerate	2.00@	2.75
Anethol	1.85@	2.25
Anisic Aldehyde	3.35@	4.00
Benzophenone	1.15@	1.30
Benzyl Acetate	.70@	1.00
Benzyl Alcohol	.75@	1.00
Benzyl Benzoate	1.10@	1.65
Benzyl Butyrate	2.25@	3.00
Benzyl Cinnamate	5.15@	6.00
Benzyl Formate	3.75	Nom'l
Benzyl-Iso-eugenol	10.25	Nom'l
Benzylidenacetone	2.25@	3.40
Borneol	1.80	Nom'l

Bornyl Acetate	2.00	Nom'l
Bromstyal	5.00	Nom'l
Butyl Acetate	.11@	14 1/2
Cinnamic Acid	3.75@	4.50
Cinnamic Alcohol	3.25@	4.00
Cinnamic Aldehyde	1.65@	1.75
Cinnamyl Acetate	10.40	Nom'l
Cinnamyl Butyrate	12.00@	14.00
Cinnamyl Formate	10.00@	13.00
Citral, C. P.	3.50@	4.00
Citronellol	6.50@	7.00
Citronellyl Acetate	6.75	Nom'l
Coumarin	3.00@	3.50
Cuminic Aldehyde	8.00@	11.25
Diethylphthalate	.24@	.33
Dimethyl Anthranilate	4.55@	5.00
Ethyl Acetate	.25@	.50
Ethyl Anthranilate	5.75@	7.50
Ethyl Benzoate	.90@	1.15
Ethyl Butyrate	.75@	.90
Ethyl Cinnamate	3.25@	3.75
Ethyl Formate	.60@	1.00
Ethyl Propionate	.80	Nom'l
Ethyl Salicylate	.90@	1.00
Ethyl Vanillin	5.25@	6.00
Eucalyptol	3.50	Nom'l
Eugenol	2.75@	3.25
Geraniol, dom.	3.85@	5.25
Geranyl Acetate	3.50@	4.00
Geranyl Butyrate	6.00@	6.85
Geranyl Formate	6.85@	8.25
Heliotropin, dom.	3.35@	6.00
Hydrotropic Aldehyde	15.00@	18.00
Hydroxycitronellal	7.75@	10.00
Indol, C. P.	26.50@	30.00
Iso-borneol	1.00@	1.10
Iso-butyl Acetate	1.25@	2.00
Iso-butyl Benzoate	1.65@	2.70
Iso-butyl Salicylate	2.70	Nom'l
Iso-eugenol	4.00@	4.85
Iso-safral	3.00	Nom'l
Linalool	7.75	Nom'l
Linalyl Acetate 90%	8.75@	10.00
Linalyl Anthranilate	15.00@	
Linalyl Benzoate	10.50@	
Linalyl Formate	9.00@	12.00
Menthol, Japan	16.00	Nom'l
Chinese	16.00	Nom'l
Synthetic	15.75	Nom'l
Methyl Acetophenone	1.55@	1.80
Methyl Anthranilate	2.60@	2.80
Methyl Benzoate	.70@	1.10
Methyl Cellulose, f.o.b. shipping point	.60	Nom'l
Methyl Cinnamate	2.25@	3.50
Methyl Eugenol	3.50@	6.75
Methyl Heptenone	3.25	Nom'l
Methyl Heptene Carbonate	40.00@	60.00
Methyl Iso-eugenol	5.85@	10.00
Methyl Octine Carbonate	24.00@	30.00
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.50@	4.00
Methyl Salicylate	.35@	.38
Musk Ambrette	4.25@	9.00
Ketone	4.40@	9.70
Xylene	1.65@	2.50
Neroline (ethyl ether)	2.00@	3.15
Paracresol Acetate	2.50	Nom'l
Paracresol Methyl Ether	2.60@	3.50
Paracresol Phenyl-acetate	6.50@	8.50
Phenylacetaldehyde 50%	3.00@	3.75
100%	4.50@	5.00
Phenylacetic Acid	3.00@	3.75
Phenylethyl Acetate	3.85@	5.00
Phenylethyl Alcohol	2.50@	3.00
Phenylethyl Anthranilate	16.00@	

Phenylethyl Butyrate	5.10@	7.25
Phenylethyl Propionate	4.25@	6.00
Phenyl Formate	12.50@	18.00
Phenyl Valerianate	16.00@	17.50
Phenylpropyl Acet.	10.00	Nom'l
Santalyl Acetate	20.00@	22.50
Skatol, C. P. (oz.)	5.35@	6.00
Styralyl Acetate	2.50@	3.00
Styralyl Alcohol	9.25@	12.00
Vanillin (clove oil)	2.60	Nom'l
(guaiacol)	2.35	Nom'l
Lignin	2.35	Nom'l
Vetivert Acetate	25.00	Nom'l
Violet Ketone Alpha	18.00	Nom'l
Beta	15.00	Nom'l
Methyl	6.50	Nom'l
Yara Yara (methyl ester)	2.50	Nom'l

#### BEANS

Tonka Beans, Surinam	.70@	.95
Angostura	2.50@	3.00
Vanilla Beans		
Mexican, whole	9.25@	9.50
Mexican, cut	8.25@	8.50
Bourbon	8.25@	9.00
South American	10.00@	
Tahiti	3.50@	4.10

#### SUNDRIES AND DRUGS

Acetone	.81/2@	.09
Almond meal	.25@	.27
Ambergris, ounce	17.00@	20.00
Balsam, Copaiba	.50@	.54
Peru	1.30@	1.50
Beeswax, bleached, pure		
U. S. P.	.57	Nom'l
Yellow, refined	.521/2	Nom'l
Bismuth, sub-nitrate	1.20@	1.22
Borax, crystals, carlot ton	55.50@	58.00
Boric Acid, U. S. P., cwt.	6.95@	7.55
Calamine	.18@	.20

Calcium, phosphate	.08@	.083/4
Phosphate, tri-basic	.09@	.10
Camphor, domestic	.681/2@	.831/2
Castoreum	13.00@	26.00
Cetyl Alcohol	1.75	Nom'l
Pure	2.25	Nom'l
Chalk, precip.	.031/2@	.061/2
Cherry Laurel Water, carboy	5.75@	6.25
Citric Acid	.21	Nom'l
Civet, ounce	28.00@	49.00
Clay, colloidal	.07@	.15
Cocoa Butter, lump	.251/2@	.27
Cyclohexanol (Hexalin)	.30@	.50
Fuller's Earth, ton	15.00@	33.00
Glycerin, C. P., drums	.181/4@	.183/4
Gum Arabic, white	.42@	.45
Amber	.141/2@	.151/2
Gum Benzoin, Siam	4.00@	4.25
Sumatra	.60@	.65
Gum Galbanum	1.80@	2.00
Gum Myrrh	.60@	.65
Henna, pwd.	.30@	.35
Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.35@	.36
Anhydrous	.36@	.37
Magnesium, carbonate	.09@	.103/4
Stearate	.24@	.27
Musk, ounce	50.00	Nom'l
Olibanum, tears	.25@	.30
Siftings	.11@	.13
Orange Flower Water, gal.	2.00@	2.50
Orris Root, African, pwd.	1.05@	1.20
Paraffin	.061/4@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.061/4	.081/2
Quince Seed	1.75@	2.00
Rice Starch	.09@	.10
Rose Leaves, red	5.45@	5.75
Rose Water, gal.	6.50@	8.00

Rosin M. per cwt.	4.80@	
Salicylic Acid	.35@	.40
Saponin	2.00@	2.50
Silicate, 40°, drums, works,		
100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb.		
58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100		
pounds	2.60@	3.75
Spermaceti	.26@	.27
Stearate Zinc	.30@	.31
Styrax	1.40@	1.60
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	4.25@	4.50
Triethanolamine	.341/2	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.101/2	.103/4

#### OILS AND FATS

Castor No. 1, tanks	13@	
Cocoanut, Manila Grade,		
c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill,		
tanks	123/4@	
Corn Oil, distilled, bbls.	.151/2	Nom'l
Cotton, crude, Southeast,		
tanks	123/4@	
Grease, white	.081/8@	
Lard	.1380@	
Lard Oil, common, No. 1		
bbls.	.14@	
Palm, Niger, drums	.081/4@	
Peanut, refined, barrels	.161/2	Nom'l
Red Oil, distilled, tanks	.121/2@	
Stearic Acid		
Triple Pressed	.185/8@	.195/8
Double Pressed	.157/8@	.167/8
Tallow, acidless, barrels	.141/4@	
Tallow, N. Y. C., extra	.083/4@	
Whale oil, refined	.1232@	

These Five NORTHWESTERN Ethyl Esters will  
add much to the quality of your products.

# ETHYL

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VALERATE**

